the OIL AND GAS JOURNAL

NOVEMBER 25 1937

PRICE 5 CENTS

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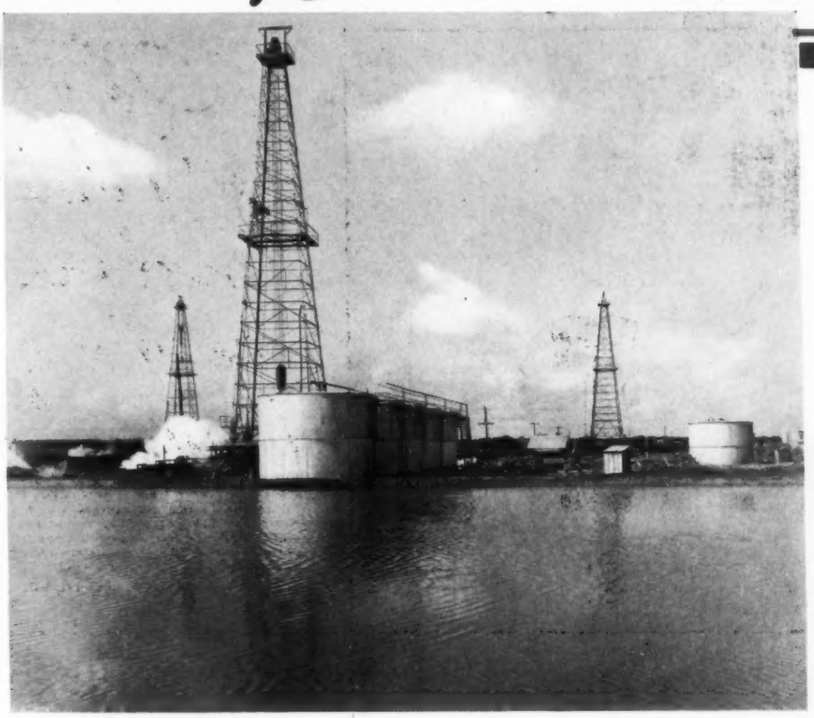

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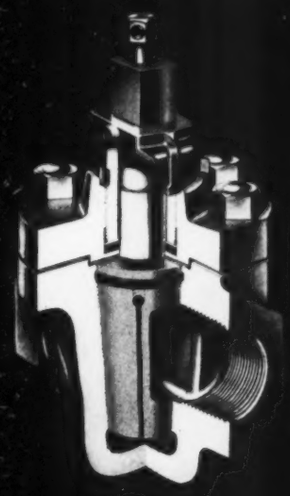

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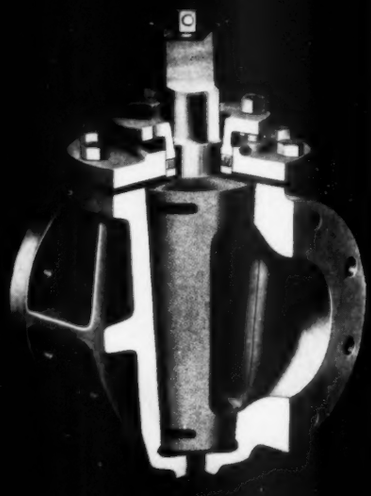

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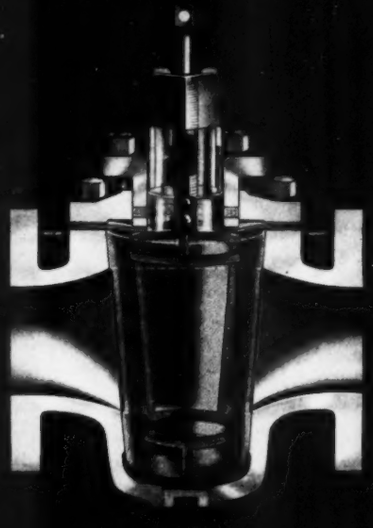

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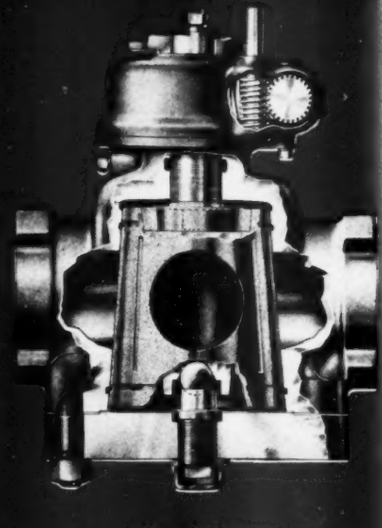

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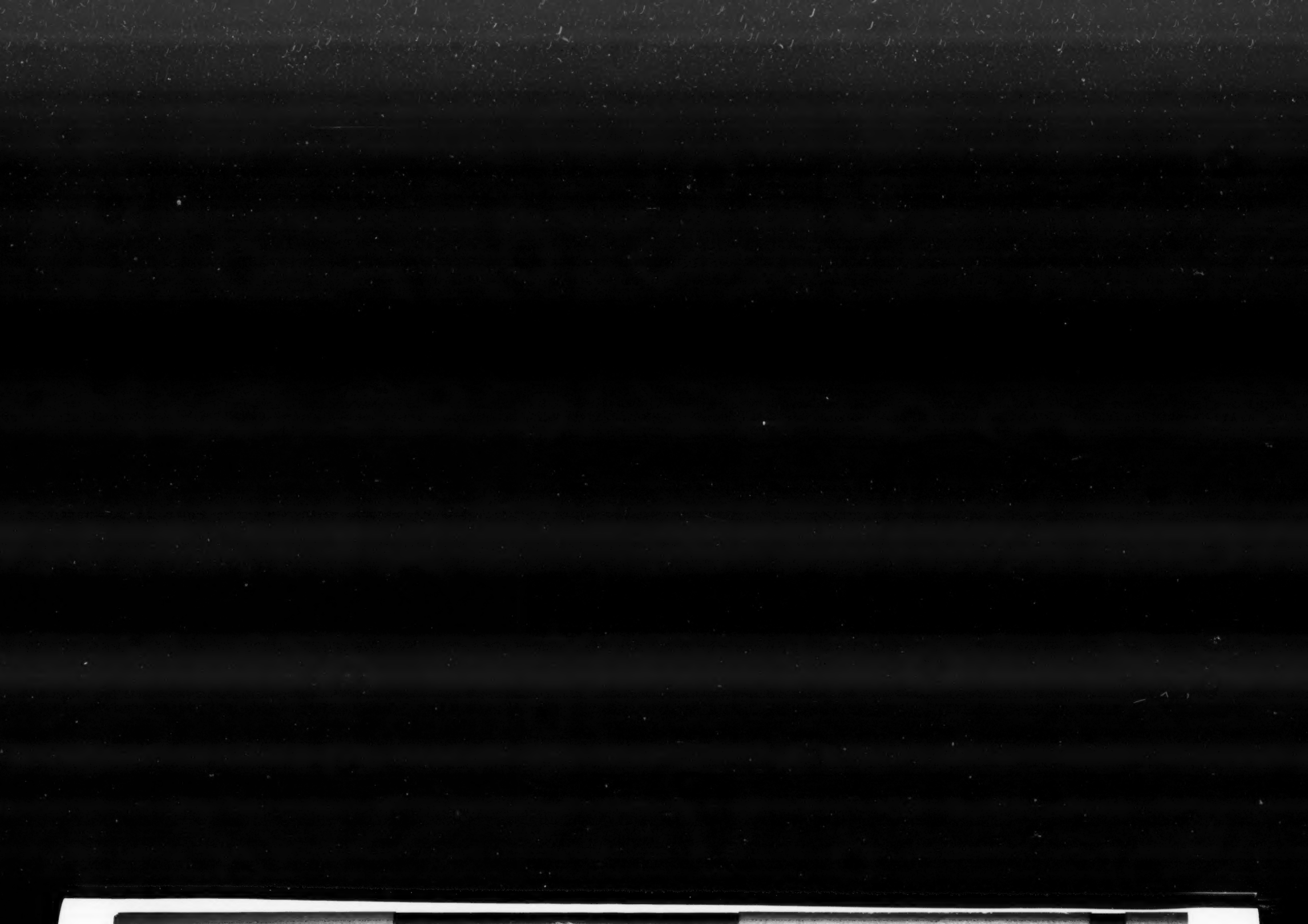

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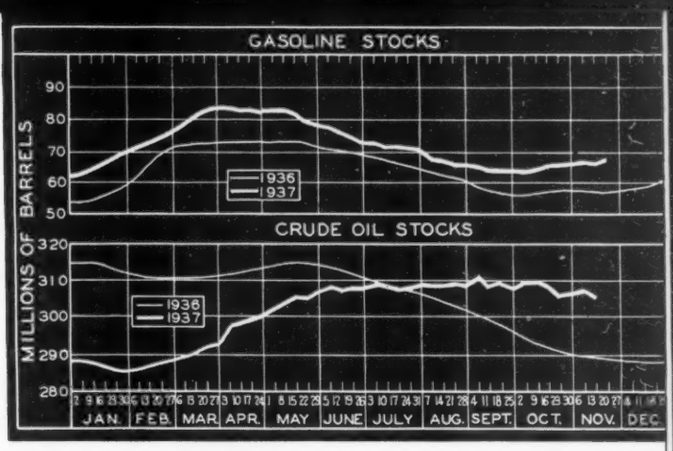


Oil Picture Includes New Factor

A SUNDAY shutdown in the largest oil-producing area, a renewal of labor difficulties with a cessation of operations at a major refinery, speculation regarding December proration schedules and lower temperatures, were all part of the oil picture at the start of a new week. Considerable importance was attached to the fact that the East Texas field which produced an average of 486,599 barrels daily last week, was shut down on Sunday without major operating difficulties resulting. The shutdown was complete with the exception of comparatively few wells allowed to flow to provide casinghead gas for minimum natural gasoline plant operations. Most operators approved the action of the Texas Railroad Commission in shutting down the field to secure additional data on bottom-hole pressures as a basis for directing future operations. From the standpoint of supply, this action which will be continued three more Sundays, will result in a reduction of approximately 65,000 barrels daily in this week's crude production.

CRUDE PRODUCTION *3,575,070 barrels daily average—up 27,948 barrels.*

CRUDE STOCKS *305,608,000 barrels as of November 13—down 1,616,000 barrels.*

GASOLINE STOCKS *67,661,000 barrels as of November 20—up 626,000 barrels.*

REFINERY RUNS *3,365,000 barrels daily week of November 20—up 30,000.*

On the Houston ship channel the refinery of the Shell Petroleum Corporation was closed Friday due to labor difficulties. This plant refines approximately 75,000 barrels of crude oil daily being one of the largest units on the Gulf Coast. Continued stoppage of operations will present a serious problem in finding outlets for this large quantity of crude oil. The Shell management has announced that it will continue its regular crude purchases in Texas and New Mexico.

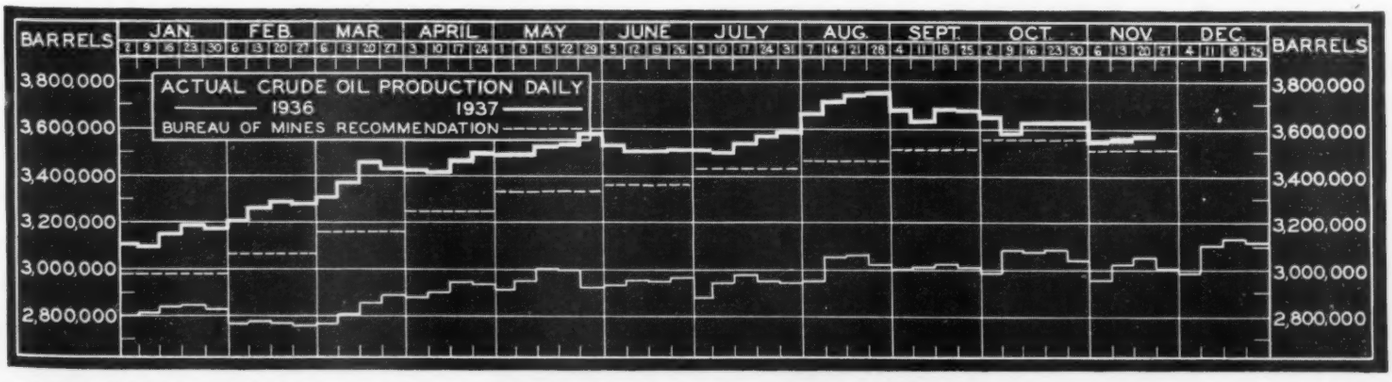
Information the first of the week indicated that Texas, Oklahoma, Kansas and probably two other states will reduce their output in December to the point where the total will be under the Bureau of Mines recommendations for that month. It is claimed this action is necessary because the slump in refinery markets has brought curtailment in crude runs to stills which were not anticipated earlier in the month. It is contended that December production should be at least 100,000 barrels under the average for November.

The advent of cold weather over a large consuming area has not helped an already weak motor fuel market. In the Mid-Continent, however, refiners were not giving additional price concessions in gasoline sales and sellers were hopeful that the bottom had been reached in spot quotations. The low temperatures were aiding the demand for furnace oils and all burner oils. Heavy fuels continue weak in practically all markets except California where heavy commitments to the Orient have been made over the balance of the year.

Daily Average Production for Week

	Nov. 20 1937	Bur. Mines Nov. est.	Nov. state allowable	Nov. 13 1937
Oklahoma City	148,900			114,050
Fitts	80,850			79,425
Remainder of state	360,275			363,100
Total Oklahoma	590,025	598,000	575,000	556,575
East Texas	486,599			485,748
West Texas	205,000			203,400
North Central Texas	106,848			108,398
Texas Panhandle	77,550			70,850
East Central Texas	105,850			109,849
Gulf Coast Texas	336,198			337,800
Southwest Texas	114,350			113,599
Total Texas	1,432,395	1,413,300	1,358,322	1,429,644
North Louisiana	75,062			70,100
Gulf Coast Louisiana	169,000			169,349
Total Louisiana	244,062	246,200	253,150	239,449
California	712,750	674,600	674,600	710,150
Kansas	178,950	189,700	180,215	193,300
Arkansas	46,070	33,100		44,145
Eastern fields	131,150	124,000		131,300
Michigan	55,248	47,400		56,069
New Mexico	104,900	104,800	104,800	104,890
Rocky Mountain area	79,520	77,900		81,600
Total United States	3,575,070	3,509,000		3,547,122

Increase 27,948 bbls. daily.



New Data on East Texas Is Obtained in Shutdown

By NEIL WILLIAMS

KILGORE, Tex., Nov. 22.—With the first of a series of Sunday shutdowns of their field behind them, East Texas operators are speculating on the significance of the Railroad Commission's order. It is a matter of conjecture whether the shutdowns may serve in solving the problem of how to hold withdrawals within conservation limits.

Cooperating to the fullest extent with the Railroad Commission in its expressed purpose of making a study of reservoir conditions that the most efficient flowing basis of the field may be determined, operators closed in their wells for the 24-hour period from 7 a.m. Sunday, November 21, to 7 a.m. Monday. During that period, with reservoir conditions reasonably stable and uniform, bottom-hole pressure readings were made in the 91 key wells and in the two salt water disposal injection wells west of the field.

Under the same conditions, bottom-hole pressure readings will be made each of the next three Sundays, and it is intimated if sufficient data are not obtained on these Sundays, the shutdown period may be extended. It is this intimation that is giving East Texas operators concern.

Although the commission's order directed that all the field's approximate 24,000 wells be closed in on Sundays, provision was made for the production of approximately 4,800 wells to supply gas for domestic requirements. On the basis of a gas production of 350 feet per barrel of oil and an allowable of 20 bbls. of oil per day, these wells produced approximately 33,600,000 feet of gas Sunday. Wells producing on Sunday are required to shut down some other day during the week, or else limit their respective quotas for a week to the equivalent of six days' allowable. Key wells are required to shut down Saturdays as well as Sundays but are permitted to make up that day's allowable during the remainder of the week.

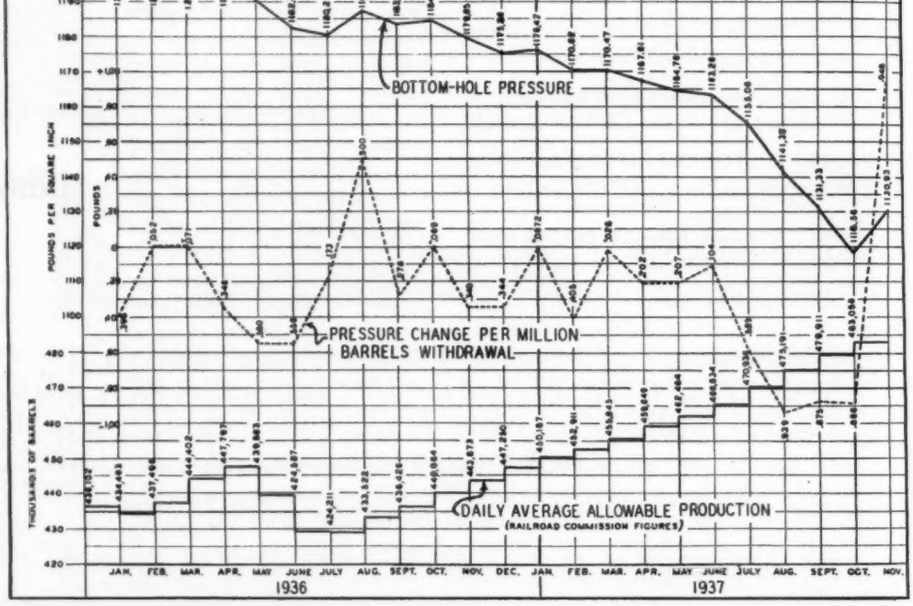
Under the schedule no gas is permitted to be produced except for actual field camp and domestic consumer requirements. This excludes the operation of natural gasoline plants except to process the gas produced by wells permitted to remain open on Sunday. There are 22 plants in the field but only from 14 of these is residue gas taken by domestic consumers. The remaining eight plants are shut down completely. No gas is being made available for drilling rigs or other such fuel uses.

A definite schedule of leases and wells which can be produced, if necessary, on Sundays is made up for each natural gasoline plant. These wells can be drawn on not to exceed the production of one day's allowable. If gas production of these wells exceed the field camp and town domestic requirements, sufficient wells must be closed in to reduce the gas supply to the needs. If additional gas is needed, the opening of other wells will be authorized. In all cases, the wells produced on Sundays will be those as far from key wells as possible.

Due to the fact that the Railroad Commission does not have sufficient bottom-hole pressure cars and instruments to take the readings in all the 91 key wells and the two salt water injection wells in one day, companies with instruments of their own are assisting. The Railroad Commission has five cars, one of which is assigned to one of the salt water wells, leaving four to work the field. In the schedule worked out, these four cars made the tests in 30 of the key wells. Four wells were assigned to Amerada Petroleum Corp.; three to Atlantic Refining Co.; one to Arkansas Fuel Oil Co.; three to Cities Service; 12 to Humble Oil & Refining Co.; two to Magnolia Petroleum Co.; seven to Ohio Oil Co.; four to Shell Petroleum Corp.; four to Sinclair Prairie Oil Co.; six to Stanolind Oil & Gas Co.; eight to Sun Oil Co.; seven to Tide Water Associated Oil Co.

Gulf Oil Corp.'s single instrument is being kept on one of the two salt water injection wells, so tests in this company's key wells are being made by Railroad Commission cars entirely. So far as possible the companies make the tests in their own wells, and in each instance a Railroad Commission engineer must be on hand to assist and check the readings. All instruments are calibrated each week prior to making the surveys.

Reaction of the Sunday shutdown on the two salt water injection wells is being watched particularly. On each of these wells, a pressure car and crew is being kept constantly throughout the shutdown period, and frequent tests are being made. Pressure readings and other data obtained in these wells are expected to play a vital role in determination of a more efficient basis of producing the field.


BOTTOM-HOLE PRESSURE
POUNDS PER SQUARE INCH
PRESSURE CHANGE PER MILLION BARRELS WITHDRAWAL
POUNDS
DAILY AVERAGE ALLOWABLE PRODUCTION
(RAILROAD COMMISSION FIGURES)
THOUSANDS OF BARRELS
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV.
1936
1937

Variations in bottom-hole pressure and pressure change per million barrels withdrawal for the East Texas field over the past 23 months. Data given as of the twelfth of each month

Texas Railroad Commission headquarters at Kilgore

For several months, control of the East Texas field has presented a puzzling situation. With steadily increasing withdrawals from the reservoir, due to addition of new wells and mounting water production, and with indicated bottom-hole pressures declining excessively, the need of a substantial reduction in allowables has been recognized. However, with the production of wells already reduced practically to marginal well limitations the proration factor (2.32 per cent of the hourly potential of a well) has been maintained consistently.

The present proration factor has been in effect since June 21, 1936, when daily average production of the field was around 430,000 bbls. Allowable production of the field, effective November 16, was

Portion of East Texas field near Kilgore

488,035 bbls., which with an estimated water production of more than 75,000 bbls., makes a total daily fluid withdrawal from the reservoir of more than 563,000 bbls.

Engineers have calculated that the critical rate of production of the field is less than 450,000 bbls daily. Above that rate of withdrawal, it is figured, reservoir pressures begin to drop excessively. Not since January 26 has production of the field, exclusive of water production, been down to that level.

The increasing rate of withdrawal has been reflected in bottom-pressure declines which have been recorded steadily each month since January until the past month. From June 13 to October 12, average bottom-hole pressure dropped a total of 47.66 pounds, bringing the average pressure of the field to a low of 1,118.56 pounds. If that rate of pressure decline had continued it was figured that within 15 to 20 months the pressure of the field would be down to 950 pounds, the level at which, theoretically, all wells would have to be placed on artificial lift.

Artificial Lift

This does not mean that when the average pressure of the field drops to 950 pounds all wells will go on artificial lift. There are instances of wells with pressures as low as 750 pounds still flowing naturally. On the other hand there are wells on the west edge with pressures as high as 1,250 pounds that have to pump. The average pressure is calculated on the basis of readings in the key wells only, and when this pressure figure drops to 950 pounds there still may be many wells with pressures at a much higher level.

During recent months there has been a rapid increase in the number of wells producing by artificial lift. On the latest report of the Railroad Commission, just released, through October, there are 4,747 wells on artificial lift, including 4,317 wells on pump and 430 on air or gas lift. The total is an increase of 726 wells over the previous report, made in April, which showed 4,021 wells on artificial lift (3,663 wells pumping and 358 wells on air or gas lift). Since January there has been an increase of 1,531 wells on artificial lift. A year ago there were only 2,754 wells on artificial lift, 2,469 wells being on the pump and 285 on air or gas lift.

The sharp decline in bottom-hole pressure which took place from June 13 to October 12 has been made puzzling by an increase of 12.37 pounds from October 13 to November 8. This increase was recorded although withdrawals continued to increase during that period. Engineers are unable to offer any serious explanation for this increase. In view of the increase during the last pressure period there is question whether the excessive declines recorded in the four previous pressure periods reflected normal drops. It is hoped the data obtained during the present Sunday shutdown bottom-hole pressure readings will offer some explanation.

Mounting water production is becoming a source of anxiety among East Texas operators. According to a survey just made by the commission there are 3,026 wells making water in varying amounts from 2 per cent up. This represents an increase of 466 wells since the April water report, and a gain of 875 water wells since January. A year ago there were 1,827 wells making water.

Water production (Woodbine water only) at this time, according to the Railroad Commission, is 75,241 bbls. from the 3,026 wells, an average of 24.72 bbls. per well. Company engineers estimate the water production much greater. On the April water report, water production was 53,314 bbls. daily, an average of 20.56 bbls. per well, while in January water production amounted to only 46,327 bbls. daily, an average of 21.42 bbls. per well per day.

Water Intrusion

It is estimated that water now underlies approximately 60 per cent of the field from west to east. Although it is possible the water may not advance rapidly further eastward, it is expected water production will appear in increasingly greater volume from now on in wells already making water.

What bearing the present shutdown program will have on the conditions in the field remain to be seen. It generally is assumed that little can be expected in the way of reductions in per well allowables with the field already practically on a marginal basis. Of the 23,978 wells reported on November 18, 18,113 wells were producing only the marginal allowable of 20 bbls. or less. This leaves only 5,865 wells with allowables above the 20-bbl. marginal limit. Of these the biggest well in the field is producing a maximum of only 24 bbls. daily. It is calculated that the entire 5,865 wells are producing less than 10,000 bbls. daily above the marginal allowance.

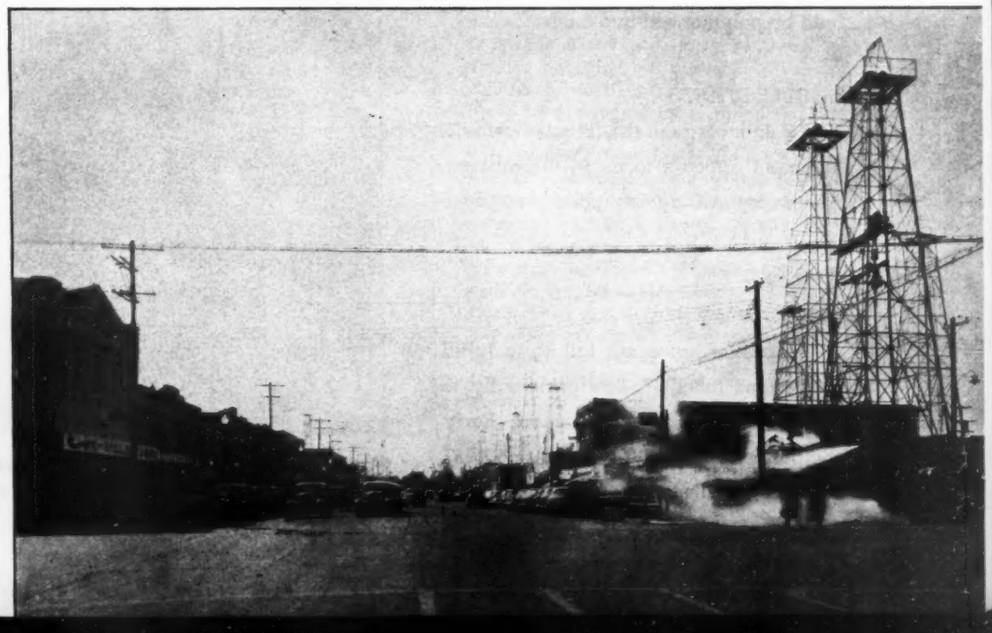
The classification of marginal wells applies only to pumping wells under the state statutes and on this basis it might be possible to curtail flowing wells below the marginal limits but Railroad Commission orders provide that no well shall be cut below the set allowable of marginal wells. Courts also have held that wells of greater potential are entitled to greater proportionate allowables. This also would be a major obstacle against any attempt to cut the allowable of a flowing well below that of a marginal pumping well.

"Dead" Wells

It has been charged lately that many wells now reported "producing" their allowable production are dead or not capable of making their respective allowables, and that if these wells were eliminated production of the field would be materially reduced. Railroad Commission reports now show only 322 wells incapable of producing the 20-bbl. daily marginal allowable for 30 consecutive days. These have a total daily production of 2,957 bbls. (November 18). The report lists 22 dead wells and an additional 66 wells not producing for various reasons.

While the Railroad Commission's order specifically states that the sole purpose of the Sunday shutdown is to enable the commission to determine reservoir conditions under more stable and uniform conditions so that a more efficient flowing basis may be adopted in the field, a reduction in allowable, the equivalent of an average of nearly 65,000 bbls. daily is being effected for the period of the shutdowns. On the basis of the daily allowable production Sunday amounting to approximately 486,000 bbls., the four Sunday shutdowns will cut a total of 1,944,000 bbls. from the period's production. This figures 64,800 bbls. daily.

Drilling on main street of Kilgore



SPARKS FROM THE NEWS

KEY AREA

In discussing the pro and con of the Sunday shutdown in East Texas it is necessary to keep in mind that it is still the key field in the present oil situation. Its current production and remaining reserves exceed those of any single area in the United States.

NEW TERRITORY

Interest shown by several operators in lands offered at the recent Cheyenne-Arapahoe Indian lease sale indicate that Canadian and Blaine counties in western Oklahoma may be explored for oil before long.

HIGHER COSTS

Latest Department of Labor reports indicate necessity of maintaining or increasing present market structure. In refining, per capita earnings in August were 23.5 per cent greater than last year with 11.3 per cent gain in earnings of crude producing division.

BIG CUSTOMERS

The 4,400,000 trucks registered in the United States account for goodly share of gasoline consumption. Truck manufacturers expect to sell between 750,000 and 900,000 new units during 1938. This year's sales will approximate the latter figure.

NO LIMIT

A statistician speculates as to possible increased supplies if all the gas that will come the next few months from legislative chambers at Washington and many states could be polymerized into motor fuels.

TROUBLE STARTS

Another stage in the Illinois Basin development appears to be in the making. A discovery at Clay City points to a town-lot play.

DISAPPOINTMENT

Oil burner sales are failing to fulfill expectations for 1937, due principally to fall-off in new home construction. Early anticipations of 300,000 sales during 1937 will not be realized.

FASCIST FUEL

Figures show that Italian crude oil imports from United States increased over 400 per cent during first eight months of 1937 compared with similar 1936 period. An outstanding weakness of the Fascist nations is their lack of oil supplies.

TO THE NORTH

Problems in the oil industry are not confined to the Southwest. Michigan has some excess production and Montana is losing its Canadian outlets due to expanding production of Turner Valley field in Alberta.

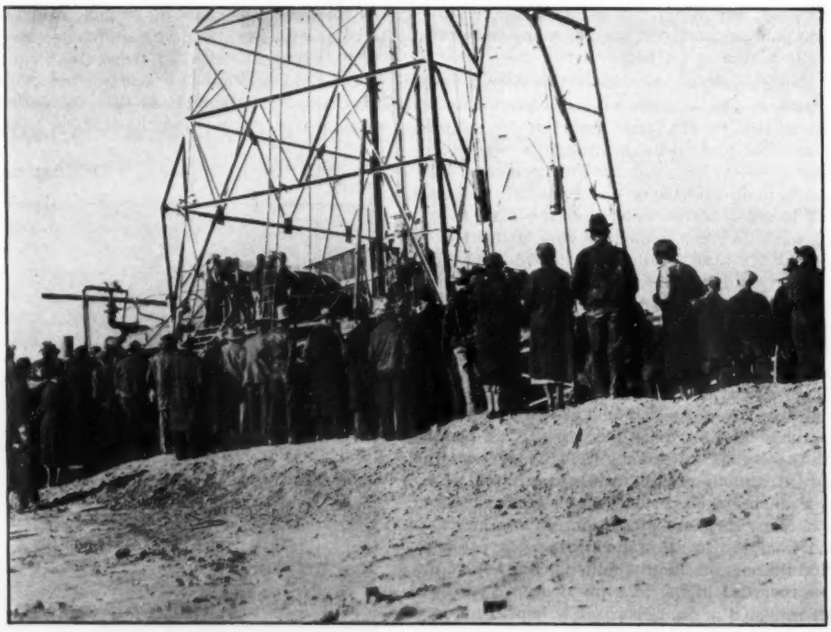
BELIES ITS NAME

Arkansas Conservation Board belies its name when for a third time it postpones proration of its side of Rodessa field until January 1. Its action threatens to nullify all the accomplishments of Texas and Louisiana conservation bodies in that important area.

POSSIBILITIES

The Hunton, Simpson, Wilcox, Siliceous and other formations that are paying off in western and southern Kansas are present in northeastern Kansas—now it is the task of operators to see if they are oil-bearing in that area.

NORTH DAKOTA OIL-MINDED



Governor Langer was among the crowd watching the spudding of a wildcat in Williams County this month. The deep test is being drilled by the California Co.

Winter Weather in Michigan Tends to Balance Production

By L. G. E. BIGNELL

MOUNT PLEASANT, Mich., Nov. 20.—The 16 oil fields of this state are producing about 56,000 bbls. daily or about 9,000 bbls. in excess of the Bureau of Mines estimate. Nearly half of this oil comes from the two fields in Gladwin County which have about 300 of the 1,700 wells in the state. New completions are adding about 10 wells each week to these two fields known as Wicklund and Oard, or the north and south fields of the Buckeye Township area. Recent completions in the south field indicate this field will be extended to the northwest. If there is to be any connection between the north and south fields it probably will be through completions of wells north and west of the present west edge of the Oard field because dry holes have been drilled immediately north of the present developed section of this field.

Another very active area in Michigan is in Allegan County, south of Muskegon. The Salem field has about 45 wells with a daily production of about 3,000 bbls. New permits for this field exceeded those issued for the Buckeye Township fields and it is estimated there will be about 1,000 acres in the Salem field when fully developed. With one well to 10 acres this will mean drilling of more than 50 wells to develop completely this structure.

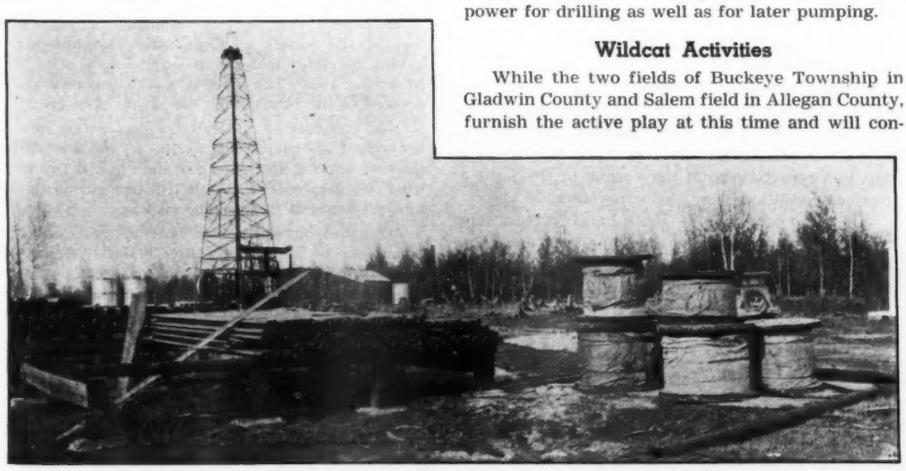
The Salem field was opened in February of this year by completion of Lentz & Miller, Inc. No. 1 Rabb with an initial production of about 35 bbls. This started the play and several other wells were completed before pipe line outlet was provided. After developing a market for this oil the wells were acidized and many then produced in excess of 1,000 bbls. per day initial. At present all wells are producing practically their full capacity and new wells are being acidized as soon as completed. No restrictions are placed on rate of production in this area other than those established by market demand and pipe line facilities.

The Salem field is unique in that the production has been found in the Traverse limestone of Devonian age. While the Muskegon field had production from this horizon it was more of a gas than an oil field. The wells are about 1,600 feet deep and the oil is found at different levels in the 40 feet of pay. There is water at the base of the Traverse and care is used in drilling in, but if water is accidentally encountered it can be plugged off. The Traverse formation lies above the Dundee lime, the most productive formation in Michigan but to date no well has penetrated deep enough in the Salem field to test the Dundee formation. It has been established that the 920-foot-below-sea level contour marks the oil-water contact in this field. The Marshall sandstone is exposed at the surface over the Salem field and the size and shape of this exposed formation conforms closely to the size and shape of the producing Traverse formation. There is about 120 feet of closure on the Traverse in the Salem field compared with about 70 feet of relief in the Muskegon field on the same formation.

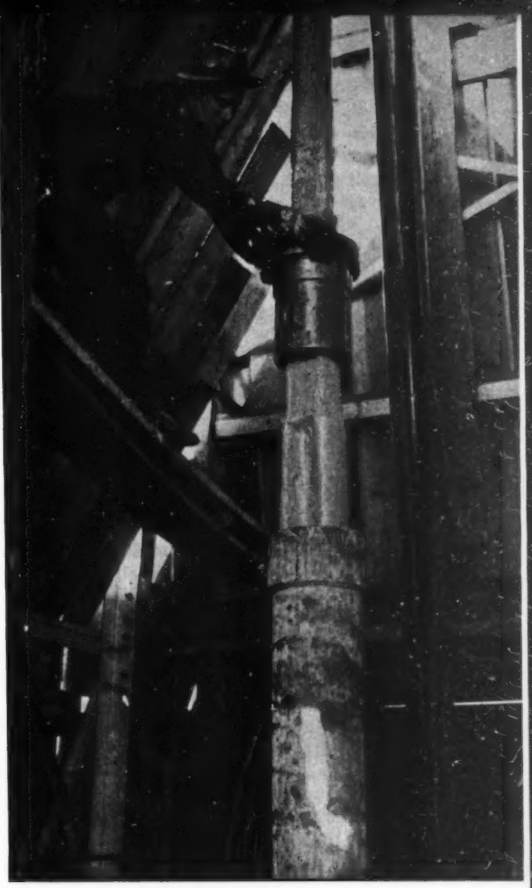
For the most part all wells in Michigan are still drilled with cable tools. Some holes are started and drilled through the drift with rotary outfits but they are the exception. Salem wells are drilled with cable tools and cost about $9,000 each completed. In many instances gas engines furnish the power for drilling as well as for later pumping.

Wildcat Activities

While the two fields of Buckeye Township in Gladwin County and Salem field in Allegan County, furnish the active play at this time and will continue to do so until both are fully defined, there are numerous wildcat tests being drilled in Michigan that are proving of interest. One new strike is reported in the Edenville area in North Midland County, where Sun Oil Co. drilled No. 1-B State in section 5-16n-1w and encountered an oil showing in about 48 feet of Dundee limestone found at 3,801 feet. This test is about 2 miles southeast of the South Beaverton pool but there is a dry hole between this well and the field.



Casing, tubing and wire lines stacked on lease in Buckeye Township oil field, Gladwin County, Michigan. The view is typical of cut-over forest region developed for oil and gas



Driving 10-inch surface casing through drift in Michigan well

The importance attached to the Sun Oil Co. test is variously estimated and as the well has not yet been completed and acidized it is difficult to make any definite estimate of its size. Some operators think this well may mark an intermediate trend between the Mount Pleasant and Porter fields in Midland County and the Buckeye Township fields in Gladwin County. Others think the well is on a small, local structure and may not prove of much importance.

In Michigan it has become a more or less generally accepted theory that the gas and oil fields lie in trends which extend from southeast to northwest. Several such groups of fields can be distinguished by a study of a good gas and oil field map of Michigan. The cause of these trends is still undecided but they are pronounced enough to encourage prospecting in between proven areas in hopes of developing other productive fields. For this reason the Sun Oil Co. well is of interest and if it should develop a field of major importance it will result in considerable drilling activity in both the northwest and southeast direction.

Arenac County, north of Midland County, still offers possibilities of new pools. Some geologists have indicated a northwest-southeast trend between the Buckeye Township fields of Gladwin County and the Clayton field of Arenac County, and while some small showings have been secured in wildcats in Adams Township west of the Clayton field, nothing of importance has yet been developed. A test of this kind is C. & M. Securities Co. No. 1 Haggi in section 26, Adams Township, which reported 80 bbls. of oil after an acid treatment of 2,000 gallons in the Traverse limestone found at 2,012 feet. Work is still being done on

this well and if it should develop into a commercial producer it may open a new field in the west portion of Arenac County.

The use of hydrochloric acid in limestone formations originated in Michigan and much has been done to perfect this method of treating wells and it is now common practice to reacidize wells after production declines appreciably. This has been found quite satisfactory in many instances. Practically every new well is acidized on completion.

Salt water gives much trouble in all Michigan fields. The brine of the Marshall formation has long been used by chemical manufacturing companies in Michigan for the extraction of many chemicals. Wells were drilled to this formation solely for securing the brine but in more recent years brines from the Dundee have been delivered to the chemical plants and has been used to augment the supply from the Marshall formation. In other fields it has been found necessary to return salt water to some underground formation such as the Parma sand and Monroe dolomite. Acid has been used to open the pores in limestones and dolomites used for water disposal and this treatment has been found beneficial in most instances. Where the face of the formation has become caked with salt or other solids deposited by the water being introduced for disposal purposes it has been found an acid treatment has created new channels into which the water has escaped freely.

Many cities and towns in Michigan rely upon natural gas for fuel. Mount Pleasant in Midland County is one such town and because of the rapidly diminishing supply with increasing demand due to winter it has been found necessary to extend gas lines to other sources of supply. One well rated at about 3,000,000 feet per day proved a disappointment after hooked into the gas system because it promptly went to salt water. Permission was then granted by the Michigan Public Utilities Commission to the Gas Corporation of Michigan to lay a 13-mile pipe line from Mount Pleasant to Broomfield to secure 100,000,000 feet of gas from Consumers Power Co. and purchase casinghead gas in the Sherman field. This is to be a 4-inch line and material was being rushed to the right of way to complete the work before deep snows interfered. Failure of the gas wells in the Vernon and Clare fields has brought about this shortage which affects Clare as well as Mount Pleasant.

Possible Reduction

Rumors were heard of a cut in the price of crude oil if the drilling campaign continued and production was held at the present level into the winter. However, weather will materially slow drilling activity and it seems probable producers will voluntarily reduce the rate of production in some fields now producing to capacity in order that the price may be maintained.

While there are several major oil companies active in Michigan, for the most part development and production of oil is being carried on by independents. Trends are outlined and plays developed along them in accordance with the ideas of the operators interested. It is believed there are many areas in Michigan with favorable indications of gas and oil still to be prospected but it is probable development will continue to be carried on by moving ahead or to the sides of discovered production and gradually opening and extending districts. The development in Allegan County is an exception but even there the discovery well was drilled by Muskegon operators although the new field does lie southwest of Grand Rapids and is considerably south of any other production in the state. This places the Salem field well up on the sides of the Michigan Basin and while numerous tests have been drilled all over the state in relative positions stratigraphically outside of the Muskegon field nothing of commercial importance has been developed.

Bureau of Mines Estimate of Requirements for December

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the demand in December, 1937, is 3,491,300 bbls., or 17,700 bbls. less than the daily average estimated for November. It is 341,200 bbls. (11 per cent) higher than the actual daily production for December, 1936, and 10 per cent higher than the actual demand for domestic crude for that month.

Crude oil production during the four weeks, October 2 to October 30, averaged about 3,606,000 bbls. daily. During that period crude oil stocks declined 1,896,000 bbls. net, of which 1,603,000 bbls. was in domestic grades, indicating a daily demand for domestic crude of 3,663,000 bbls. This decline in crude stocks was offset by an unusual increase in gasoline stocks during October. This increase, equivalent to almost 3,800,000 bbls. of crude, would indicate about 120,000 bbls. daily less crude demand on the basis of actual motor fuel requirements.

Motor Fuel

Domestic demand. The estimate for domestic motor fuel demand for December is 40,000,000 bbls., or 1.5 per cent higher than the actual demand for December, 1936, when the warmest December in more than 10 years and buying in anticipation of price increases, took the refinery demand to 16 per cent higher than the December, 1935, figure. The present forecast represents an increase of 7 per cent over a normal demand for December, 1936. No allowance can be anticipated for unusual weather and it seems probable the present trend of economic conditions will have a reverse effect upon domestic buying during this December compared with December, 1936.

Exports. The latest figures available indicate a continuance of exports at a much higher level than last year. Motor fuel exports for December have been estimated as 3,900,000 bbls., an increase of 400,000 bbls. over the November estimate.

Stocks. Stocks of finished and unfinished gasoline amounted to 65,380,000 bbls. on September 30. According to the American Petroleum Institute, gasoline stocks increased about 1,650,000 bbls. during October, the first increase in this month since 1931. This would place the stocks at more than 67,000,000 bbls. as of October 31, and reports for the first week in November indicate they will be increased considerably before December 1. Even though this may be an uneconomically high level for gasoline stocks, the bureau anticipates it will be necessary to add 3,900,000 bbls. more during December to supply heating oil requirements for that month. The Bureau of Mines wishes it clearly understood it is not recommending this increase, but is forecasting what may occur in the light of present conditions and past experience.

Gasoline production.—Benzol and "direct" sales and losses of natural gasoline have been estimated as 700,000 bbls., making the estimated production of gasoline 47,100,000 bbls., or 1,519,000 bbls. daily. This is distributed as follows (thousands of barrels): East Coast, 6,710; Appalachian, 1,660; Indiana-Illinois, 8,050; Oklahoma, 3,090; Kansas-Missouri, 2,630; Inland Texas, 3,760; Gulf Texas, 10,890; Louisiana Gulf, 1,430; Inland Louisiana-Arkansas, 930; Rocky Mountain, 1,110; California, 6,840.

Crude Petroleum

Runs to stills.—Natural gasoline consumption at refineries in December is estimated as 8.1 per cent of the total gasoline required, or 3,820,000 bbls. The yield of straightrun and cracked gasoline is estimated as 43 per cent, 1.1 per cent below the actual yield for December, 1936. Although such a situation is not desirable from the standpoint of the conservation of crude, an abnormally low yield has existed for several months; and, unless later statistics indicate a change, the winter demand for heating oil, combined with abnormal gasoline stocks, may tend to keep the gasoline yield from recovering. Application of this yield to the estimated straightrun and cracked gasoline production of 43,280,000 bbls. gives refinery crude oil requirements as 100,630,000 bbls., or 3,246,000 bbls. daily.

Foreign crude runs.—Foreign crude run to stills is estimated as 2,400,000 bbls., same as for November.

Exports, fuel, and losses.—Crude oil exports have been estimated at 5,800,000 bbls., or 400,000 bbls. less than for November. The estimate for crude oil burned as fuel and losses has been increased 500,000 bbls. to 4,200,000 bbls., in anticipation of the usual seasonal change.

ESTIMATED CRUDE OIL REQUIREMENTS BY STATES

(Daily average in barrels)

State—	Forecast Dec., 1937	Forecast Nov., 1937	Actual production Sept., 1937
Texas	1,399,800	1,413,300	1,483,200
California	679,400	674,600	685,200
Oklahoma	588,800	598,000	617,400
Louisiana	244,000	246,200	264,100
Kansas	186,000	189,700	197,300
New Mexico	104,100	104,800	113,700
Wyoming	57,100	56,300	57,300
Michigan	51,800	47,400	52,200
Pennsylvania	51,000	51,800	55,900
Arkansas	33,900	33,100	37,300
Illinois	24,400	20,900	28,300
Montana	15,800	17,100	15,600
Kentucky	14,500	14,600	15,000
New York	14,300	14,700	15,100
Ohio	9,900	9,800	11,100
West Virginia	9,800	9,900	10,900
Colorado	4,400	4,500	4,000
Indiana	2,300	2,300	2,400
Total	3,491,300	3,509,000	3,666,000

The amounts in this table have been calculated as the requirement for the months stated and are not intended to be calculations of daily average demand for the current year or for any period other than the months stated.

Exploration Geophysicists Hold Mid-Year Meeting at Galveston

HOUSTON, Tex., Nov. 22.—Approximately 220 members of the Society of Exploration Geophysicists attended the third mid-year meeting at the Rice Hotel November 19-20. The meeting was a technical session devoted to the reading and discussion of papers.

New methods of underground exploration now being sought are counted on by the oil industry to find the new pools it will need in future years, Dr. W. M. Rust, Jr., geophysicist, said in a paper tracing the history of electrical prospecting methods.

"Opinions on whether or not new reserves of oil remain to be discovered differ," Doctor Rust said. "Many geophysicists maintain that practically all of the oil stored up in the earth has been found already and is now being exhausted. Others, and I believe the majority, hold this point of view that there is more oil in the earth than has been discovered yet, and that new methods of exploration which are now being developed will locate it."

J. C. Karcher, president of the association, stated the meeting was most successful and that the society was looking forward to the annual convention which will be held at New Orleans during the American Association of Petroleum Geologists annual meeting at which time election of new officers will be held.

Antitrust Investigation Is Ordered by President

By HENRY D. RALPH

WASHINGTON, D. C., Nov. 22.—The administration's long discussed campaign against "monopolistic practices" took definite form when the Federal Trade Commission, at the direction of President Roosevelt, began an immediate investigation into business practices which tend to increase the cost of living.

The president wrote the commission that "My attention has been directed to reports of a marked increase in the cost of living during the present year, as compared with recent years, attributable in part to monopolistic practices and other unwholesome methods of competition. I believe it to be important to know the facts touching this situation."

The commission will throw into this investigation all facilities which can be spared from routine work and since it has promised an early report it probably will not undertake extensive new field work and economic studies but will base its report largely on information already at hand. It is even likely a report may be made early in January, in which case antitrust legislation will be one of the principal matters before the regular session of congress. The FTC investigation dovetails with other recent activities of the administration concerning prices and the antitrust laws. The Department of Justice has been making a thorough study of all court interpretations of the present antitrust laws preparatory to recommending revision, and Attorney General Cummings recently announced he will ask an additional appropriation of $1,000,000 for his antitrust division which now has a budget of less than half a million, so that additional investigations and prosecutions may be undertaken. Another significant move is the action of the Treasury Department in creating a new post of assistant general counsel in its procurement division and appointing to that position E. H. Foley, Jr., formerly general counsel of the Public Works Administration. The procurement division, which makes most of the purchases for the government's civilian departments, has long complained about identical bidding on government contracts and has asked the Department of Justice to investigate a number of such instances with a view to antitrust prosecution. It is presumed a large part of Mr. Foley's duties will be to attempt to break up identical bidding and to secure lower prices for commodities the government purchases.

Speculation on Motives

There is much speculation regarding the motives behind the president's letter to the trade commission. Some consider it as groundwork for an attempt to secure repeal of the Tydings-Miller resale price maintenance act passed last August which the Federal Trade Commission opposed. There have been complaints this act has operated to increase the prices of many household commodities, although as yet it has been used only slightly, if at all, in the petroleum, building materials, and heavy goods industries. Another conjecture is that it is part of a move to bring down the costs of building materials as a prelude to other plans of the administration for stimulating private construction, particularly home building. Another factor may be an effort to forestall further increases in prices of many manufactured commodities which administration economists believe have been rising too rapidly.

In any event, legislation to regulate business policies, particularly price policies, will be a prime issue during the regular session of congress. While President Roosevelt did not mention the subject directly in his message, he did refer to it parenthetically when discussing taxes, saying:

"We should give special consideration to lightening inequitable burdens on the enterprise of the small business men of the nation. Small businesses or even those of average size have difficulties of financing and distribution which are not shared by large corporations. Therefore, by special tax consideration they should receive more equal opportunity to compete with their more powerful competitors. In this way we may also find assistance in our search for a more effective method of checking the growing concentration of economic control and the resultant monopolistic practices which persist today in spite of antitrust statutes. A further search for additional methods to meet this threat to free competitive enterprise is called for at this time."

Although he does not yet have open administration support, Representative Wright Patman of Texas has announced he will press for action on his bill to prevent corporations from engaging in retailing enterprises in more than one state. He will shortly introduce a revised form of his bill which he says is sufficiently drastic to prevent any firm from doing any retail business outside the state of its incorporation, either directly or indirectly. "It will not permit breaking up into state units under one common management or holding company as heretofore done by a certain large oil company," he declared recently.

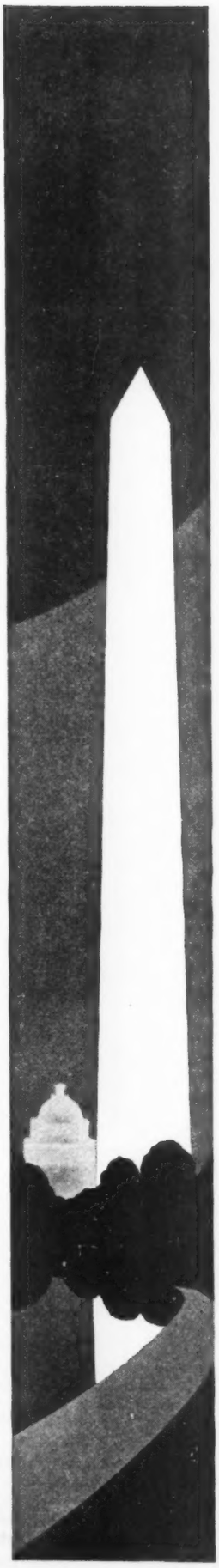
Wage and Hour Legislation

The special session opened with no sign of a break in the deadlock which kept the Black-Connery wage and hour bill tied up in the house rules committee during the closing weeks of the last session, but supporters of the bill launched a determined effort to bring it up on the floor by means of a petition to discharge the rules committee from its further consideration, a cumbersome procedure requiring the signatures of a majority of the house. Meanwhile, many substitute proposals were under discussion, and it appears most likely that if it is brought up for debate the bill will be radically changed.

More attention is being paid to a new bill introduced by Representative Arthur P. Lamneck of Ohio which would put the wage and hour question under the Federal Trade Commission by defining substandard labor conditions as an unfair method of competition. Compliance with wage, hour, and child labor laws of the state in which the goods are produced would be considered compliance with the federal law, and the Federal Trade Commission would have authority to establish wage and hour standards only where states have no such laws of their own. All three of these proposed substitutes exhibit a tendency to give consideration to local conditions and state authority and to get away from centralization of power in the federal government as proposed in the labor standards board which would be set up by the Black-Connery bill.

Tax Revision

Revision of taxes to aid business has suddenly become the chief topic of discussion in congress, although it had not been planned to consider revenue revision until the spring. The ways and means committee has hardly begun its study of the tax laws but already great pressure is being brought on it to take immediate action on taxes believed to be holding back business before proceeding with less important sections of the revenue laws. The surtax on undistributed corporation income is meeting general condemnation and there is talk of its outright repeal, although the administration is seeking to retain its principle while submitting to amendments designed to aid small businesses. Original suggestions were to exempt from this tax all corporations with an income of less than $5,000 but further consideration has convinced members of congress that larger firms are also greatly in need of a tax law permitting them to retain at least a substantial portion of their earnings for surplus, debt retirement, and new equipment, and the exemptions undoubtedly will be large enough to affect corporations of substantial size.



Deep Pay Formations Underlie Forest City Basin of Kansas

By DAL DALRYMPLE

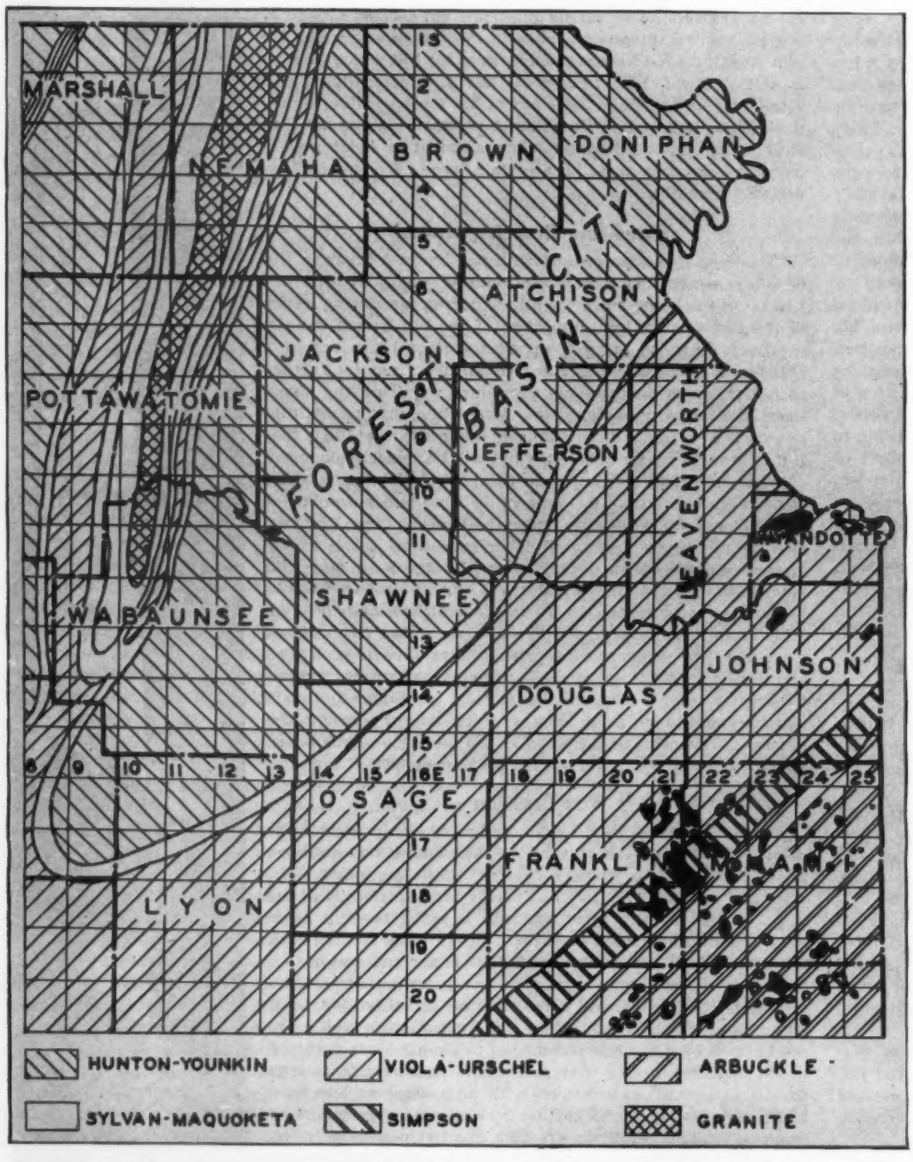
Northeastern Kansas, long overlooked by conservative oil men and superficially explored by only a few of the more adventuresome wildcatters may yet contribute important chapters to the development of the Sunflower state's petroleum resources.

The Chautauqua Arch of southeastern Kansas has been a happy hunting ground for oil men for many years.

The Nemaha Granite Ridge of the east central counties has seen development of some of the greatest oil pools in the state.

The Barton Arch of western and central Kansas is getting the big play today, with new producing areas being opened nearly every week.

And now the Forest City Basin of northeastern Kansas, still an unknown quantity so far as important production is concerned, is slowly pushing into the Kansas picture as oil men in increasing numbers turn their attention in that direction. Recent discoveries of Siliceous lime pools in old areas of southeastern Kansas has served to increase interest in deep production possibilities of the entire eastern side of the state. The leasing boom and resultant discoveries in Illinois provided further incentive for Kansas operators to look to unexplored areas of their own state for future activity. Recent geologic studies have provided some long-needed information about Forest City Basin possibilities. These factors have combined to make northeastern Kansas attractive to oil men seeking new and promising areas to explore.



Areal distribution of pre-Mississippian in northeastern Kansas, from Hugh W. McClellan, Wichita, Subsurface Distribution of pre-Mississippian Rocks of Kansas and Oklahoma, American Association of Petroleum Geologists Bulletin

The city of Lawrence, in Douglas County, has taken the initiative in bringing northeastern Kansas to the attention of oil men. Of paramount importance is the location at Lawrence of the Kansas Geological Survey, which is headed by Dr. R. C. Moore, state geologist, and Dr. Kenneth K. Landes, assistant state geologist, both of whom reside at Lawrence. The Douglas County Development Association of Lawrence recently assembled 50,000 acres of oil and gas leases, covering several well-defined structures, to facilitate the oil development of Douglas County in particular. The Douglas County Republican, a Lawrence newspaper, issued a special oil and gas edition a few weeks ago, edited by H. G. Hotchkiss, Wichita oil operator and authority, elaborating upon the petroleum possibilities of the Forest City Basin and adjacent areas. This is thought to have been the first special oil edition to be issued by a northeastern Kansas paper.

A Few Operations

Several oil companies, including one major company, have made geologic surveys of Douglas County and other areas, and considerable leasing has been reported in this and neighboring counties.

A wildcat which has Siliceous lime as the objective is being drilled in C NE NE section 26-9-14e, Jackson County, by D. L. Jobe, independent operator of Tulsa. It is on a pronounced structure worked out by Mortimer & Mortimer, geologists. It was temporarily shut down at 500 feet.

Other tests now being drilled are at various stages in Osage County, near Carbondale; Brown County, at Horton; Richardson County, Nebraska, north of Sabetha in Nemaha County, Kansas, and in Douglas County, near Twin Mounds.

The nearby Nebraska test, which is of interest because of its relation to this area, is Arab Petroleum Co. and others No. 1 Ogle, SE SE section 9-1n-14e, which had a show of free oil at 2,288-2,300 feet. Viola lime 3,019 feet, slight showing of oil at 3,019-40 feet, hole full of water at 3,075 and 3,152 feet, showing of oil at 3,100 feet, set 6-inch casing at 3,230 feet, Wilcox or St. Peter sand 3,255 feet, Platteville 3,296 feet, showing water, Granite 3,423 feet, total depth, and was plugging back to Viola lime at last report.

The Forest City Basin offers favorable conditions for deep oil production, according to reports of the State Geological Survey. Some of the northeastern counties in which favorable conditions for

deep production may be found are Leavenworth, Wyandotte, Johnson, Douglas, Jefferson, Franklin, Shawnee, Jackson, and Osage among others.

Nemaha Ridge on West

The northeastern Kansas area is bounded on the west by the Nemaha Granite Ridge, a buried mountain range that extends from the Arbuckle Mountains of southern Oklahoma to Omaha, Neb. Some of the nation's great oil fields, including the Oklahoma City field and the Eldorado field, produce from formations influenced by this uplift. In northern Kansas it rises to its greatest height in the state, with the result that wells drilled in some sections of Nemaha County would strike granite at 500 feet.

In southeastern Kansas, along the Chautauqua Arch, the granite rises to continue eastward to form the Ozark Mountains.

The Forest City Basin is between these two great granite uplifts, Figure 2 showing the relationship to the other areas.

Doctor Moore, discussing northeastern Kansas, said the new production being uncovered in Illinois is found in areas in which geological conditions are somewhat similar to the Forest City area; that the basin is flanking the Ozark uplift, and it is on the flanks of the granite ridges of western Kansas that most of the state's oil production is being obtained. The state geologist shows no hesitancy in commenting favorably on northeastern Kansas' possibilities.

"From a geological standpoint," he was quoted as saying, "we have good reasons to believe that conditions for oil production are more favorable in northeastern Kansas than in the southeastern area."

Doctor Landes also believes northeastern Kansas offers good possibilities for oil production.

"Practically all of the oil-bearing strata of eastern Kansas are present in northeastern Kansas, and we know of no reason from a geological standpoint why they should not produce," he said.

Both Doctor Moore and Doctor Landes repeatedly have called attention to the fact that very few tests have been drilled to the deeper oil formations of eastern Kansas, and they believe a program of deeper drilling will uncover important production, particularly in Siliceous lime.

Information Is Limited

Very little direct information regarding deep formations in eastern Kansas, and especially the Forest City Basin area, is available for the simple reason that little or no effort was made to keep logs of the comparative few deep tests that have been drilled. A geologist for one of the major companies was reported by Hotchkiss to have said that if all the logs and surface elevations of wells drilled in eastern Kansas were available, that a score or more large oil companies would make appropriations for wildcat tests to the deeper horizons in the area. The Geological Survey is endeavoring to remedy this lack of information by obtaining logs and residues of all wells drilled in the state.

A bulletin published by the State Geological Survey on "Subsurface Studies in Northeastern Kansas," by John W. Ockerman, provides considerable information regarding the Forest City Basin and neighboring areas. This report, prepared in response to many inquiries for subsurface information concerning northeastern Kansas, contains the results of studies of logs and samples of wells, together with information relative to oil and gas possibilities in Atchison, Brown, Doniphan, Douglas, Jackson, Jefferson, Johnson, Leavenworth, Shawnee, Wabaunsee and Wyandotte counties. Several subsurface cross-sections were included in order to correlate the stratigraphy of the several counties.

One of these is reproduced with this article, Figure 1, showing an east-west cross section

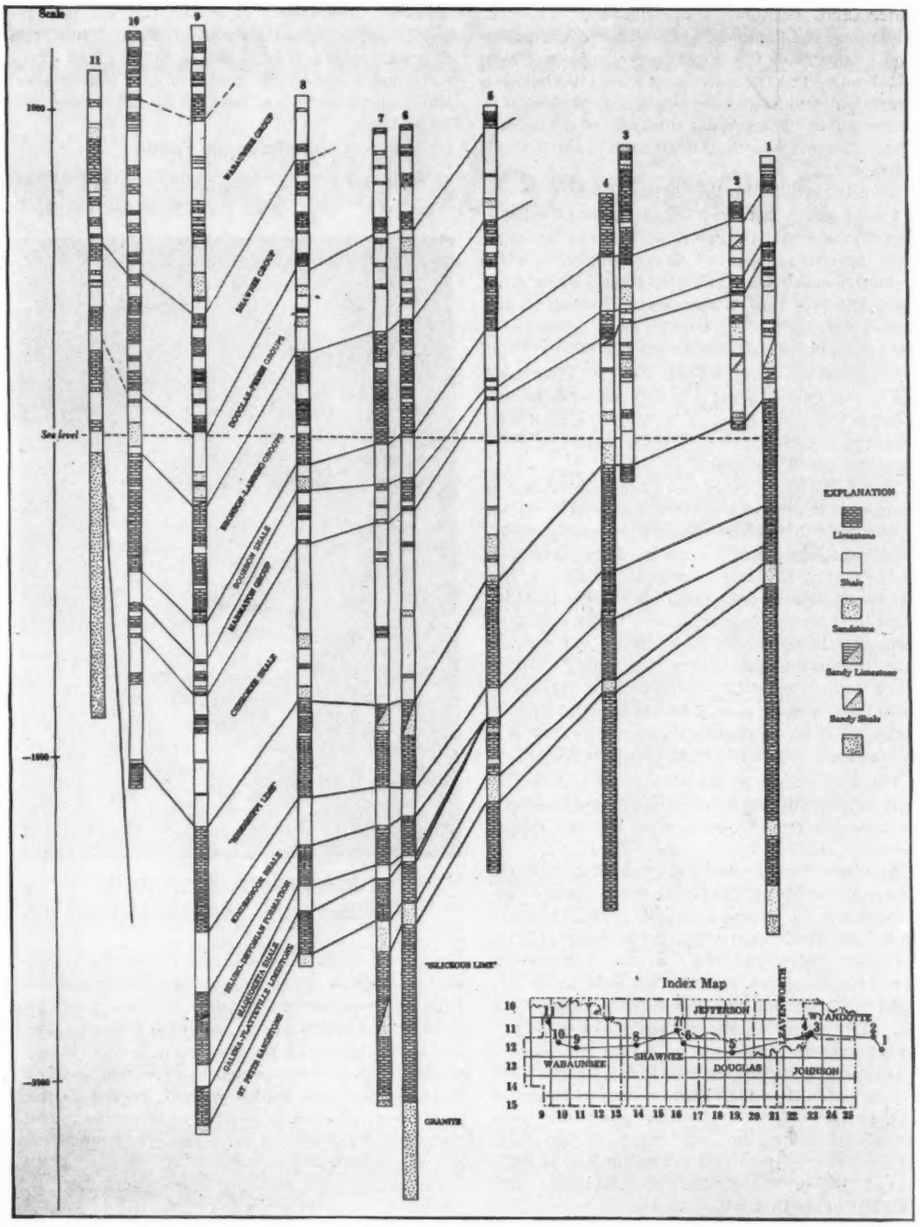


Fig. 1—East-west cross section through Forest City Basin, northeastern Kansas, showing formations found in wells drilled in Wabaunsee, Shawnee, Douglas and Wyandotte counties, Kansas, and the Raytown and Bush Creek Mine wells in Missouri. From Subsurface Studies in Northeastern Kansas, bulletin of Kansas Geological Survey

through the Forest City Basin, based on tests drilled in Wabaunsee, Shawnee, Douglas and Wyandotte counties, Kansas, and two wells across the state line in Missouri.

The Forest City Basin, it is explained in the bulletin, lies in the extreme northeastern part of Kansas and extends northeastward into Missouri. It was named after Forest City, Mo., where a deep well was drilled in 1901. The correlation of this well indicated there is a basin, and subsequent drilling in Kansas has fairly well defined the boundaries and outline of the southern end of the basin in eastern Kansas.

Test in Wabaunsee

The section of Empire Oil & Gas Co. No. 1 Schwalm, SE cor. section 19-12-11, Wabaunsee County, (shown as No. 9 well in Figure 1), is typical of the pre-Pennsylvanian geologic sequence of the basin. The following beds were recorded:

	Thickness in feet
Mississippian system:	
Mississippi lime	320
Kinderhook shale	185
Devonian-Silurian systems:	
Limestone	222
Ordovician system:	
Maquoketa shale	70
Galena-Plattville limestone	121
St. Peter sandstone	31

The well was drilled 31 feet into St. Peter sand and abandoned.

Formations known to be present but not exposed are of lower Pennsylvanian, Mississippian, Siluro-Devonian, Cambro-Ordovician and pre-Cambrian age. Only Ordovician formations, as outlined in the report, are mentioned here.

The Maquoketa shale is found below the Siluro-Devonian formation in northeastern Kansas. It has been correlated with the Sylvan shale of Oklahoma by some geologists. Its greatest recorded thickness in the area was 78 feet in a well drilled in section 8-12-14, Shawnee County.

The Galena-Platteville limestone, overlying St.

Peter sand, correlates approximately with the Viola lime of Oklahoma, but is dissimilar from the two members of the Viola present in northern Oklahoma. The Decorah shale, which lies between the Galena and Platteville, is not always present or recognizable. The average thickness of the Galena-Platteville series in the Forest City Basin is about 110 feet.

Overlying Siliceous lime in northeastern Kansas is a sand series that has been variously called Wilcox, Simpson and St. Peter, with the latter name more generally approved. Correlation with wells in southwestern Iowa indicates the St. Peter sandstone extends into northeastern Kansas in the Forest City Basin. The sand ranges from 60 to 100 feet in thickness in northeastern Kansas.

Siliceous lime is found below the St. Peter sand and ranges from 450 feet in a well drilled in section 14-11-16, Shawnee County, to 760 feet in a well drilled in section 12-14-22, Johnson County. It thins out to the north and west.

The majority of wells that have been drilled to the granite in northeastern Kansas found a coarse, arkosic sand that has been called the basal sand by some and Reagan sand by others. It apparently is equivalent to the Reagan sand in Oklahoma, but this correlation is only applicable when the Siliceous lime section is complete. In northeastern Kansas the lower part of the Siliceous lime appears to be present, thus making the basal sand Cambrian in age. In the Forest City Basin area it is comparatively thin, ranging from 8 feet in a well drilled in section 12-12-16, Shawnee County, to 35 feet in a well drilled in section 12-14-22, Johnson County.

The following brief sketches of oil and gas activity or possibilities in some of the northeastern counties are from reports compiled by Doctor Landes:

Atchison County—So far only two deep tests for oil or gas have been drilled in Atchison County. One of these was a diamond-drill hole drilled in Atchison to 1,352 feet, penetrating the Mississippi lime. The other well was drilled near the southeastern corner of the county to 3,085 feet total depth. It found pre-Cambrian granite and schist below 2,900 feet. No tests for oil and gas have been drilled in central and western Atchison County.

Doniphan County—Six tests for oil and gas have been drilled in Doniphan County. Four of these did not penetrate below the Cherokee shale, one went through Mississippi lime, and one, in section 21-1s-19e, went into Siluro-Devonian formations at 2,281 feet to 2,315 feet, total depth. The county lies on the east flank of the Forest City Basin.

Douglas County—Both oil and gas have been found in southeastern Douglas County in the vicinity of Baldwin. The most important is the Baldwin pool, in Township 15, Range 20 east, discovered in 1919. The oil is relatively heavy and occurs at about 800 feet. Due to the development of this field, Douglas County had a maximum oil production of 23,901 bbls. in 1927, but the production fell off and since 1932 the county has not been included in tabulations of the oil producing counties. Several gas wells have been drilled near Eudora, in eastern Douglas County. Both oil and gas production in the county come from sands occurring in either the Marmaton group or the Cherokee shale of lower Pennsylvanian age. Only one deep test has been drilled in the county, in section 28-12-19. It had Siliceous lime at 2,155-2,382 feet, total depth.

Jackson County—Three shallow tests have been drilled in Jackson County, none of which reached Mississippi lime, and two deep tests which reached Siluro-Devonian rocks. One of the latter was in section 3-8s-14e. The other, in section 27-7-15, was reported to have had a show of oil at top of the Siluro-Devonian at total depth of 2,639 feet. Jackson County lies on the flank of the Forest City Basin and has not yet been adequately tested for oil and gas.

Oil Showings Found

Jefferson County—Five wells have been drilled for oil or gas in Jefferson County. Three were abandoned while still in Cherokee shale, a fourth well penetrated 70 feet into St. Peter sand, and the fifth well went several hundred feet into pre-Cambrian rock, finding a thick section of Siliceous lime imediately above the pre-Cambrian. Several shows of oil and gas were reported in these wells. Most of the wells were drilled without regard to the presence or absence of structures favorable to the accumulation of oil and gas, and so the county has not been adequately tested yet.

DR. KENNETH K. LANDES
Assistant State Geologist, Kansas

Johnson County

Johnson County—Several parts of Johnson County have produced oil and gas. The Craig gas field, in which more than 60 wells have been drilled, is in Township 12, Range 23 east. The gas occurs in two horizons, a sand in the upper part of the Marmaton group, and a sand in the Cherokee shale about 50 feet below Fort Scott limestone. The Dallas oil and gas field, in Township 13, Range 25 east, extends across the state line into Missouri. Gas occurs in an upper Marmaton sand and oil in the Bartlesville sand at a depth of about 500 feet. A smaller oil field occurs a few miles westward on the east side of Township 13, Range 24 east. Scattered gas wells have been drilled in the southeastern part of the county. Only two deep tests have been drilled in Johnson County. One in section 12-14-22, reached the pre-Cambrian granite at 2,400 feet and was abandoned at 2,421 feet. The other, in section 4-14-24, was drilled 220 feet into Siliceous lime to total depth of 1,785 feet. Johnson County lies high on the flanks of the Forest City Basin and should have some Siliceous lime tests drilled on anticlinal structures.

Leavenworth County—The county has one gas field about 4 miles northeast of Linwood, producing from Squirrel sand at about 700 feet, with a lesser amount of gas from Peru sand. Two wells have been completed below the Mississippian in this county. One of these was drilled in 1887 at Leavenworth, and penetrated 246 feet of Siliceous lime, with total depth of 2,116 feet. The other well, drilled in 1930, was located in the Linwood district, in section 18-12-22. It went 101 feet into Ordovician limestone, and was abandoned at total depth of 1,546 feet.

Nine Tests Drilled

Shawnee County—Nine wells have been drilled into pre-Pennsylvanian rocks in Shawnee County. Two wells went entirely through the sedimentary series to the pre-Cambrian granite. One, in section 12-12-16, topped granite at 3,015 feet. The other, in section 14-11-16, entered granite at a depth of 3,010 feet. The Siliceous lime was 530 feet thick in the first well, and 440 feet thick in the second. The Simpson sand in this part of the state is 70 to 100 feet thick. Although so far the wells penetrating Ordovician formations in Shawnee County have found only water, the county has not been adequately tested.

Wabaunsee County—Several dry holes have been drilled in Wabaunsee County. Two were in the northwestern part of the county, immediately above the crest of the Nemaha Granite ridge. The pre-Cambrian surface was struck at 958 feet in a well in section 26-10-9, and at 1,180 feet in section 1-11-9. The east flank of the ridge is very steep and wells drilled any distance to the east find a thick sedimentary section. A well in section 15-13-12 was drilled to 3,625 feet before reaching the granite. A well in section 19-12-11 was drilled to 3,431 feet. The last 31 feet was in Wilcox sand. No shows of oil or gas were reported. The Ordovician formations have not been adequately tested in other parts of the county. A well in section 9-12-10, had a flow of helium gas.

Wyandotte County—This county produces no oil yet, but has several gas fields. Among these is the Fairfax field, in the industrial district north of Kansas City, Kan., with about 40 wells producing from two formations in the Marmaton group. The Bethel gas field, west and northwest of the town of Bethel, has about 60 gas wells, producing from two sands, one in the Marmaton and the other in upper Cherokee shale. The Welborn field, northeast of Welborn, and the Dunlap field, about four miles north of Bonner Springs, produce from the same formations. Scattered gas wells are found in other parts of the county. The depth to production ranges from about 225 to 700 feet. The deepest test in the county was drilled north of Bonner Springs in section 20-11-23 to 2,200 feet, in Siliceous lime, and was abandoned.

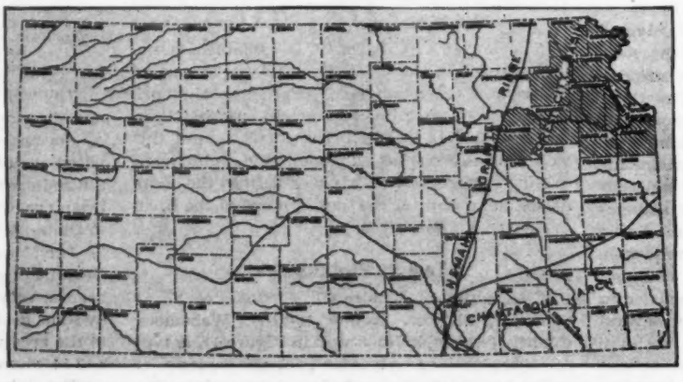


Fig. 2—Forest City Basin, between Nemaha Ridge, Chautauqua Arch

Steady Increase in Production of Polymerized Motor Fuels

By H. STANLEY NORMAN

NEW YORK, Nov. 22.—Greater diversity in the processing range of individual units, simplification of design for the sake of economy, means for converting a larger percentage of the hydrocarbons available into commercial products are the chief objectives of refining process engineers. Experiments are going forward in laboratories and pilot plants.

Fundamentally, polymerization is looked upon as a process to produce high-octane motor fuel from saturated and unsaturated gases generated in the cracking process. However, its successful application to operation on charging stock obtained from natural gas opens up a field which has vast potentialities.

Due to the nature of inquiries now resting with construction firms there seems every justification for predicting that additional contracts are in prospect for the near future. The fact is that inquiries now lodged offer greater prospect of fulfillment than all the flood of proposals which greeted announcement a few years ago when polymerizatoin was first made available.

Polymerization plants now operating or under construction have a combined capacity for producing approximately 10,500,000 bbls. of 76- to 100-octane gasoline per year. At least 50 per cent of the total capacity is still under construction, but several plants are nearing completion. The isooctane plants at Baton Rouge for Standard Oil Co. of Louisiana and in Trinidad for Trinidad Leaseholds, Ltd., will be in operation before the end of the year.

The new unitary thermal polymerization plant built by the M. W. Kellogg Co., at Point Breeze, Pa., for Atlantic Refining Co. has been in operation about three weeks. The Point Breeze plant licensed by Polymerization Process Corp. treats gaseous paraffinic and olefinic hydrocarbons from the cracking section at a temperature range of 950 to 1,100° F., and at pressures of 1,000 to 3,000 pounds. The Atlantic Refining Co.'s polymerization plant at Atreco, Tex., is much the same in design and operation as that at Point Breeze. The Point Breeze plant will produce nearly 1,750 bbls. of polymer gasoline per day when maximum conditions are reached.

Two catalytic polymerization plants now nearing completion, one in Trinidad and the other at Baton Rouge, La., will produce isooctane from isobutene and normal butenes.

Outside the United States, Soviet Russia's polymerization capacity is the greatest. The U.S.S.R. has four polymerization units with combined capacity of 9,050 bbls. per day. Each of three units has capacity of 2,680 bbls.

The Trinidad Leaseholds, Ltd. catalytic plant which is in final stages of construction has capacity of producing nearly 1,000 bbls. of isooctane per day. It will be the first plant in Trinidad and will draw its charging stock from the fractionator and absorber in its almost completely new refinery constructed in the British West Indies during the past 18 months.

At Baton Rouge, Standard Oil Co. of Louisiana is constructing its catalytic polymerization plant to process 7,000,000 feet of gas per day. This unit will be in operation before end of the year.

Alco Products Co., licensing agent for the Pure Oil Co. polymerization process, is building a new plant for Yacimientos Petroliferos Fiscales at La Plata, Argentina, which will not be available for production until about March, 1938.

POLYMERIZATION UNITS OPERATING, UNDER CONSTRUCTION OR UNDER CONTRACT

Multicoil Process

Company—	Location—
Imperial Japanese Navy	Tokuyana, Japan
Atlas Refining Co.	Shreveport, La.
Anglo-Iranian Oil Co.	Abadan, Iran
Yacimientos Petroliferos Fiscales	La Plata, Argentina
Tide Water Associated Oil Co.	Avon, Calif.

Unitary Thermal Process

Atlantic Refining Co.	Atreco, Tex.
Atlantic Refining Co.	Point Breeze, Pa.
Humble Oil & Refining Co.	Baytown, Tex.
Phillips Petroleum Co.	Borger, Tex.
Phillips Petroleum Co.	Kansas City, Kans.

Catalytic Process

Shell Petroleum Corp.	East Chicago, Ind.
The Texas Co.	Port Arthur, Tex.
The Texas Co.	Lockport, Ill.
Pan-American Refining Co.	Texas City, Tex.
Sinclair Refining Co.	Marcus Hook, Pa.
Sinclair Refining Co.	East Chicago, Ind.
Wilshire Oil Co.	Norwalk, Calif.
Gulf Oil Corp.	Port Arthur, Tex.
Standard Oil Co. of Louisiana	Baton Rouge, La.
Shamrock Oil & Gas Corp.	Sunray, Tex.
Anglo-Iranian Oil Co., Ltd.	Abadan, Iran
Richfield Oil Co.	Watson, Calif.
De Bataafsche Petroleum Maatschippij	Curacao, D.W.I.
De Bataafsche Petroleum Maatschippij	Pernis, Holland
Trinidad Leaseholds, Ltd.	Trinidad, B.W.I.
Mashinoimport	U.S.S.R.
Mashinoimport	U.S.S.R.
Mashinoimport	U.S.S.R.
Mashinoimport	U.S.S.R.

Note—There are two additional catalytic plants in existence, one in Europe and the other in the Far East.

Annual fall meeting of California Natural Gasoline Association, Los Angeles

OBITUARIES

KENNETH R. KINGSBURY, president of the Standard Oil Co. of California, died November 22 on the Grace liner Santa Paula which was passing through the Panama Canal. He was elected president of the company in April, 1919, one of the youngest executives of the Standard companies. He was born at Columbus,

K. R. KINGSBURY

Ohio, in 1876, was graduated from Princeton University at 20 and took a post-graduate course in mining engineering at Columbia. His association with the Standard Oil companies dates from December 27, 1897, when he was engaged in connection with pipe line construction in Pennsylvania. After two and one-half years in field work, he was transferred to the accounting department at 26 Broadway, New York, and then to the sales department.

In 1903, after about three years' sales department experience in New York, North Carolina and Washington, D. C., Mr. Kingsbury entered the lubricating department of the home office. In 1906 he became New York agent of the Standard Oil Co. (California), and later was appointed assistant to the president of that corporation, at the New York office.

Upon the dissolution of the Standard Oil Co. of New Jersey in December, 1911, Mr. Kingsbury was elected second vice president of the Standard Oil Co. (California) and at the closing of the New York office in 1912, he moved to California, and two years later became vice president.

CONNELL JOSEPH GALLAGHER, 80, pioneer Tulsa oil man and an alternate delegate to the Oklahoma state constitutional convention, died November 21. A native of Peoria, Ill., Mr. Gallagher came to the Indian Territory about 1890. He operated an independent oil company at Kingfisher for a number of years before moving to Tulsa in 1915.

B. C. KING, 65, pioneer Ada, Okla., attorney, and one of the three principal developers of the Fitts oil field in southeastern Pontotoc County, died November 21. With W. A. Delaney, Jr., and Sam Miller of Tulsa, he drilled the discovery well in the Fitts area. At his death he still held extensive holdings in the area.

NORRIS L. O'NEILL, 70, long associated with the management of the Chicago American League Baseball Club, died in Chicago on November 16. For many years he was a partner of the late P. H. Friel in the ownership of oil property in the Bradford and Allegany fields.

Texas Co. Asks Restoration Of Allowable in Manvel

AUSTIN, Tex.—Texas Co. is seeking a restoration of the 9,500-bbl. daily allowable at Manvel field which was cut to 7,800 bbls. on November 16. The request is that it be made retroactive.

The Railroad Commission was advised that Manvel crude is the only grade of its kind produced in Texas and is used in special equipment at the Port Arthur refinery in making lubricants and that two other such plants not owned by Texaco are taking it. The company nominated to take 11,000 bbls. of Manvel crude daily and would draw it ratably and any cut below 9,500 bbls. would cause purchases from out of state sources. Commissioner Lon A. Smith was in favor of granting the request.

They Say:

CRUDE PRICE—"There seems to be little justification for a cut in the price of crude," says Russell B. Brown, general counsel of the Independent Petroleum Association of America in a report to Charles F. Roeser, president. "The statistics of the industry do not warrant it."

Mr. Brown who is the Washington representative of the association cites past history to show that most of the increases in crude price schedules have occurred during the season of lowest consumption from November through March. He also points to the day's supply of crude in storage as indicating a strong statistical situation. He says present crude storage represents 87.5 days' supply whereas there were 106.3 days' supply in 1920 with $3.50 crude and 142.4 days' supply in 1929 with posted crude schedules of $1.20 to $1.45.

Mr. Brown concludes: "There appear to be places where for one reason or another, producers are violating the law of supply and demand. This the producer should correct but surely no one wants to accord to the marketer the position of policing the industry."

DIESEL OPERATION—"You may expect to find fewer announcements and more on diesel operation and industry news in our subsequent issues," says H. C. Major, president of the newly organized Diesel Users Association, in the initial number of the association's "family publication." The association was organized for the purpose of pooling information covering service in diesel operation including the increasing number in use within the oil industry. Headquarters of the association are located at 2 West Forty-fifth Street, New York, N. Y.

AUTOMOTIVE TAXES—Automotive taxes will hit a new high of $1,550,000,000 in 1937 or nearly $125,000,000 more than in 1936, according to estimates of the American Petroleum Industries Committee. The committee says that less than $1,000,000,000 will go to the road funds. Of the total $1,145,000,000 will go to state governments in the form of gasoline taxes and registration fees.

EQUALS 60 DISCOVERIES—"It has been estimated that the recoverable oil from the East Texas field has been increased about 30 per cent or 600,000,000 bbls., or equal to discovery of 60 average size oil fields," George W. Holland, director of the Petroleum Conservation Division, said in his annual report to Secretary of Interior Ickes in explaining the benefits resulting from the cooperation of the federal government and state of Texas.

Shipment of contraband oil has been reduced to a fraction of 1 per cent, the conservation director said in explaining that "During the fiscal year ending June 30, 1937, the Federal Tender Board and the Federal Petroleum Agency in the East Texas oil field received and considered a total of 6,420 applications for tenders, of which 4,120 were for 227,104,844 bbls. of crude petroleum and 2,300 for 23,187,091 bbls. of refined products. Except for 65 applications for crude oil tenders and 28 for refined products, all of the applications were approved by the board."

ESTIMATING EXPORTS—"Exports of motor fuel will reveal a decline of about 2,000,000 bbls. in 1938" prognosticates the New York Journal of Commerce. This estimate this financial newspaper says "is based on the belief that the Sino-Japanese conflict will be terminated sometime during the coming year and that the Spanish "hostilities will also be fairly well 'cleaned up' in 1938." The 1937 motor fuels are estimated at 36,000,000 bbls.

SCIENTIST HONORED—Several hundred leaders in science, education and business will attend the dinner to be given at the Stevens Hotel, Chicago, Friday, November 26, in honor of Vladimir N. Ipatieff, internationally known chemist. His recent contributions to the art of manufacturing motor fuels—particularly polymerization and hydrogenation—have been outstanding. He is director of chemical research of Universal Oil Products Co. and professor of chemistry of Northwestern University.

MADE GOOD—Thurman Hill, former member of the Kansas Public Service Commission, said that he would give the park board of his home town of Independence, Kans., $500 if his wildcat well in western Kansas came in for 500 bbls. a day or better. It did and he did.

OIL INDUSTRY EMPLOYMENT—The department of labor says that employment in petroleum refining in August was 128.2 per cent of the 1923-25 index, a gain of 8.4 per cent over August, 1936. Payrolls were 150.3 per cent, or 33.9 per cent greater than August last year.

The per capita earnings were $35.67 weekly or 23.5 per cent greater than August, 1937, while average hourly earnings of 97.2 cents increased 18.4 per cent. Average hours worked per week were 37.2, a gain of 5.3 per cent.

In the crude producing division the August report showed employment of 80.4 per cent of the 1929 index, a gain of 7.2 per cent with payrolls 71.2 per cent, an increase of 19.3 per cent. Weekly earnings were $33.50, a gain of 11.3 per cent, and hours worked, 39.5, a gain of 2.2 per cent with average hourly earnings of 83.9 cents, a gain of 9.2 per cent over August last year.

Employment and payrolls in petroleum refining continue to lead all major manufacturing industries.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

The Key Area

The Sunday shutdown in the East Texas field is the most interesting development of the week in the oil industry. The primary purpose is to get basic information regarding reservoir conditions in the field. The importance of this should be readily apparent to all.

East Texas is not only the largest producing field in the entire country but its present reserves exceed those of any other area in the United States. It is also the scene of more drilling activity than any other single field. Its present weekly completions exceed those of many states and large areas which include numerous pools. It has completed over 2,000 wells so far this year and its total of completions is nearing 24,000.

The critical rate of production, that is, the quantity that can be withdrawn without danger to the field, has been calculated by engineers as not exceeding 450,000 barrels daily. The allowable production November 16 was 488,035 barrels. The mounting water production, now 75,000 barrels, makes the total fluid withdrawal from the field more than 563,000 barrels.

The Sunday shutdown has been ordered by the state authorities in order to continue certain fundamental studies of conditions in the producing horizon. Nobody in the industry questions the desirability of securing the best available information in an area which represents so large proportion of our current production and reserves.

No serious losses to the operators are involved comparable to the value of the information to be obtained and its effect on total recovery. It is to the interest of the operators to continue production in the area along the best conservation principles which in turn should result in larger ultimate production in this great pool which has been the backbone of the country's production for several years and should continue to be so for a similar period, if properly produced.

In this connection, Director George W. Holland of the Petroleum Conservation Division of the Department of the Interior in his annual report to Secretary Ickes made last week emphasized that the cooperation of the federal and state governments and the operators in East Texas has greatly extended the ultimate productive capacity of the field. It has been estimated that the recoverable oil has been increased about 30 per cent or 600,000,000 barrels, equal to the discovery of 60 average size oil fields.

This report by an authority outside the industry shows what actually has been accomplished by conservation in East Texas. Having reached the point where additional information is needed to determine the future course of action the Sunday shutdown was ordered to secure the data required to continue the sound operating practices followed in the past.

One of the difficulties of the state authorities has been the limitation under the marginal well law. Regardless of the merits of this law as a general proposition for the entire state, it may develop that the East Texas situation requires special handling.

If, after this investigation, it is found that amendment is required in order to maintain bottom-hole pressure, the state—the governor and the legislature—should not hesitate to enact whatever legislation is necessary to protect the field and the state's largest source of revenue.

Considering the tremendous proportion of the state's income, both current and for an indefinite period to come, that is involved, there should be no question of the willingness of the state government to cooperate with the view of securing the largest possible recovery.

This, moreover, would be justified on the part of the state from a purely selfish standpoint for its market significance, not only in that area, but on the millions of barrels to be produced from the rest of the state.

Annual Meeting of Mid-Continent Oil and Gas Association in Tulsa

The annual meeting of the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association was held in Tulsa on Friday, November 19. Officers were elected for the ensuing year and passed resolutions in memory of members who had died in the course of the past year.

Robert S. Kerr, Kerlyn Oil Co., Oklahoma City,

Blank & Stotler

ROBERT S. KERR

was elected president; Frank O. Prior, Stanolind Oil & Gas Co., Tulsa, first vice president; T. C. Johnson, Wichita, vice president for western Kansas; Carl Weiner, Chanute, vice president for eastern Kansas; A. W. Ambrose, Cities Service Oil Co., Bartlesville, vice president for northern Oklahoma; Lloyd Noble, Noble Drilling Co., Ardmore, vice president for southern Oklahoma; W. R. Wallace, Magnolia Petroleum Co., Oklahoma City, vice president for western Oklahoma; Clarel B. Mapes, Tulsa, secretary and treasurer. The officers are also ex-officio members of the executive committee and the general board of directors.

Five members of the division who had passed away since the last annual meeting, and who were memorialized at Friday's meeting, were Walter B. Gray, Herbert G. Officer, O. T. Dawson, Sidney V. Stewart and Harry G. Tillinghast.

William N. Davis of Bartlesville, a tireless worker in the organization for years, was honored by a life membership. Mr. Davis was president of the general Mid-Continent Oil & Gas Association for 13 years.

New members added to the executive committee were Dr. H. B. Alspaugh, Rock Island Refining Co., Duncan; J. A. Aylward, Aylward Production Co., Wichita; Paul R. Bishop, Lauck & Moncrief, Wichita; C. A. Breitung, Southwest Gas Utilities Corp., Ada; C. E. Burlingame, Baltic Operating Co., Bartlesville; S. A. Dellaplain, Southland Royalty Co., Ponca City; W. S. Fees, Iola, Kans.; E. I. Hanlon, Hanlon-Buchanan, Inc.; C. L. Henderson, Vickers Petroleum Co., Wichita; C. R. Krause, Lee C. Moore & Co.; John F. O'Shaughnessy, Lario Oil & Gas Co., Wichita; C. P. Parsons, Halliburton Oil Well Cementing Co., Duncan; Frank M. Porter, Wirt Franklin Petroleum Corp., Ardmore; T. E. Ronan, Ethyl Gasoline Corp., Tulsa; W. F. Semple, Deep Rock Oil Corp., Tulsa; J. P. Shannon, Snowden & McSweeney Co., Fort Worth; J. R. Simpson, Home Stake Oil & Gas Co., Tulsa; E. S. Stahl, Stahl Petroleum Corp., Oklahoma City; Jay P. Walker, National Tank Co., Tulsa, and Frank Phillips, Phillips Petroleum Co., Bartlesville.

D. G. Mann, National Supply Co., Tulsa, was elected to the executive committee to succeed the late O. T. Dawson, and J. J. Conry, Tulsa, president of the Carter Oil Co., was elected to succeed C. H. Lieb, who will soon leave for New York.

The resignations of S. W. Howland, Gates Oil Co., Ardmore; Waite Phillips, Tulsa, and Max Westheimer, Ardmore, were accepted, and positions on the committee held by R. L. Blaffer, Humble Oil & Refining Co., and A. J. Galloway, Shell Petroleum Corp., both of Houston, Tex., were declared vacant.

Because of his illness a message of sympathy and a floral bouquet were sent to James A. Veasey, secretary and counsel of the Carter Oil Co.

Cracking Development Conference Annual Meeting at Galveston

GALVESTON, Tex., Nov. 19.—The ninth annual meeting of the Cracking Development Conference ended here today after a three-day session at the Buccaneer Hotel attended by 50 engineers, chemists, cracking plant supervisors and officials connected with the refining division of various companies.

In addition to discussion of technical reports on various phases of cracking, the group inspected cracking equipment at the Texas Co. plant at Port Arthur, Humble Oil & Refining Co. plant at Baytown and Pan American Refining Co. plant at Texas City.

Other interesting discussions included presentation of operating results from recently completed large combination cracking units, ranging up to 32,000 bbls. per day, and study of projected designs for future equipment.

Those at the meeting included J. T. Ward, C. W. Nofsinger, A. L. Baker and Nelson Adams, M. W. Kellogg Co.; W. B. Plummer, J. K. Roberts, G. W. Watts, J. H. Forrester and J. C. Ducommum, Standard Oil Co. (Indiana); P. J. Sweeney; H. J. Broderson, R. H. Price; R. L. Zimmerman, C. G. Kirkbride; S. B. Schapiro, W. S. Peeler, L. W. Moore, P. E. Darling, G. Coombs; P. L. Brandt and T. V. Sheehan, Pan American Petroleum & Transport Co.; P. E. Kuhl, L. S. Bonnell, A. C. Patterson, C. A. Hillman, P. J. Harrington, E. C. Herman, J. S. Walton and H. R. Poland, Standard Oil Development Co.; M. H. Clapp, Standard Oil Co. of New Jersey; K. G. Mackenzie; R. J. Dearborn, F. W. Hall, C. E. Emmons, T. E. Garrand, H. A. Grabo, H. G. Hall, C. W. Watson, E. S. Dixon, H. V. Atwell, J. M. Barron, S. W. Darling, L. V. Dorsch, Phillip Campbell, A. E. Higgs, F. M. Leverett, R. E. Nagle, C. Richker, M. L. Rosenberg, V. Stapleton, N. A. Scardino, R. G. Story, R. F. Trow, B. L. Sowers and P. T. Williams, Texas Co.; R. H. Smith and D. S. Simmons, Imperial Oil, Ltd.; H. D. Wilde, Jr., S. D. Turner, M. W. Mayer, R. H. Venn, G. W. Robinson, T. H. Hale, J. M. D. Heald, C. F. Kelley and S. M. Jarvis, Humble Oil & Refining Co.; F. H. Edson, E. F. English, Standard Oil Co. of Louisiana; William F. Moore, chairman of Gasoline Products Co.; E. W. Mark, of Process Management Co., and Prof. Walt G. Whitman of Massachusetts Institute of Technology.

Representatives of the companies who participated give George Armistead, Jr., engineer with Process Management Co. and affiliated companies, the major credit for working out the details of this annual conference which has become one of the most important technical meetings of the refining industry. He has been secretary of the conference since 1934. A graduate of Texas A. & M. College, Mr. Armistead started as a pipe fitter in Texas Co.'s Port Arthur refinery in 1923. Later he served as a chemist, assistant foreman of crude and lube stills and foreman of the cracking stills at Lockport, Ill. He became associated with Process Management Co. in 1933 with headquarters in New York.

GEORGE ARMISTEAD, JR.

THE MARKETS*

CRUDE OIL: *Changes in posted schedules confined to 5-cent reduction by large buyer of Pennsylvania Grade crude and 15-cent additional cut in Sunburst, Montana, crude. Lower Sunburst prices in part due to loss of outlets in Canada reflecting increased output in Turner Valley field. A few weak spots continue in domestic crude markets.*

REFINERY: *Gasoline tankcar prices fairly steady following recent reductions. Colder weather has brought decline in shipments from plants. Strong demand at firm prices for furnace oils and other overhead distillates. Demand for residual fuels slow.*

TANK-WAGON AND SERVICE STATION: *No general changes. Price cutting at several points in third and regular grades.*

FINANCIAL: *Oil stocks approach lows of the past three years. Average 30 stocks for week ending November 20: High, 30.53; low, 26.92; close, 27.54. Week ending November 13: High, 30.92; low, 28.33; close, 30.23.*

New Atlantic Tanker World's Largest Welded Ship

CHESTER, Pa.—The launching November 20 at the Sun shipyards of Atlantic Refining Co. tanker, the "J. W. Van Dyke," added to the American merchant marine an oil carrier that on one trip will be able to carry more oil than was produced in any one day between 1878 and 1909. The vessel, named in honor of the company's chairman, was christened by Mrs. W. M. Irish, whose husband retired as Atlantic's president last May.

The "J. W. Van Dyke" is the world's largest welded ship and the first American-built turbo-electric tanker. Its deadweight capacity is 18,500 tons; displacement at loaded draft is 23,898 tons. Cargo capacity is 6,552,000 gallons. The "J. W. Van Dyke" increases the number of Atlantic's tankers to 23, with a total deadweight tonnage of 233,848 tons.

Judge Holds 16 Companies but May Free More Individuals

By R. B. PYRE

MADISON, Wis., Nov. 23.—Federal Judge Patrick T. Stone ruled here today that a prima facie case of conspiracy has been established against 16 oil companies remaining on trial under the antitrust act. He announced, however, that he desired time for further consideration of the evidence against some of the 41 remaining individual defendants, which has given him "some concern," he said, and adjourned court until next Monday. At that time, barring unexpected developments, defense testimony is expected to start.

In the court's announcement today, he said he was satisfied there is competent evidence to sustain a finding of guilty as to the corporate defendants. The wording of his subsequent statement, however, was seen as an inference that some, at least, of the remaining individuals may be dismissed before the case goes to the jury.

The corporate defendants in the case were reduced from an original 27 to 16, and the individuals called to trial from 46 to 41 when the court Monday granted motions for directed verdicts dismissing three oil companies and four individuals, after having previously dismissed one oil company before the trial, four more on government motion, and one individual.

The corporate defendants whose cases will go to the jury under the ruling are Standard Oil Co. (Indiana), Socony-Vacuum Oil Co., Inc., Continental Oil Co., Pure Oil Co., Shell Petroleum Corp., Sinclair Refining Co., Mid-Continent Petroleum Corp., Phillips Petroleum Corp., Skelly Oil Co., Barnsdall Refining Corp., Globe Oil & Refining Companies of Oklahoma, Illinois and Kansas. Empire Oil & Refining Co. and Wadhams Oil Co.

All of last week was devoted to arguments on general defense motions for a directed verdict, and on individual motions after Judge Stone had denied the concerted plea.

"The court is of the opinion that there is competent and substantial evidence to sustain a charge that there was an unlawful agreement," he held, "and I do not feel justified in taking the case away from the jury."

However, the judge expressed doubt whether some of the remaining defendants actually participated and announced he would hear their arguments.

Government denunciation of its own witnesses; repeated defense protests that the prosecution was building its case on inferences unwarranted by the evidence; recurring disputes over the rules of law controlling the case, and the first outright admission that there actually was a gasoline "buying program," headlined the arguments.

This admission came from L. M. Treadwell, of counsel for Socony-Vacuum and its subsidiary, Wadhams Oil Co., who informed the court C. E. Arnott, vice president, was ready, together with two other officials, to take full responsibility for the company's participation in the program.

"It is our position," Treadwell said, "that there was a buying program in the Mid-Continent, that we participated in it, and that it was right and proper and not in violation of any law."

The government, he declared, apparently had followed a policy of indicting certain defendants merely because they were heads of their departments. He asked dismissal, in any event, for R. R. Irwin of the White Eagle division at Kansas City, Bryan S. Reid, general manager of the Chicago

W. S. S. RODGERS

division, and Charles L. Jones, vice president in charge of the domestic trade department, declaring these three had been engaged in other work and were not shown to have been connected with the buying activity. The government was mistaken in thinking Irwin was manager of the White Eagle division, which was in charge of L. L. Marcell, he explained.

Of the other Socony-Vacuum defendants, Treadwell said Arnott, H. T. Ashton, manager of the Lubrite division at St. Louis, and A. G. Maguire, Milwaukee, chairman of the board of the Wadhams Co., would accept the responsibility. It was indicated, however, that no personal motion would be argued in Arnott's behalf, Goldthwaite Dorr, also of Socony-Vacuum counsel, having informed the court that if any case went to the jury Arnott wanted his case to go with it, though he contended there was "no case."

Throughout the case defense and prosecution have differed as to whether the antitrust law interpretation governing the case is to be found in the Appalachian Coal decision or the Trenton Potteries case. Col. Donovan, of the defense, was involved in both cases, as counsel for the defense in the coal case and for the government, as assistant attorney general, in the appeal stages of the Trenton case.

Both were civil actions and both price fixing cases. The government contends the potteries case controls, the supreme court having held the legality of the combination concerned was not related to the reasonableness of the prices agreed upon.

The Appalachian case, relied upon by the defense, involved a combination of producers representing 73 per cent of all coal produced in the Appalachian region. The court held the combination could not exact arbitrary prices and could set the price only at the going market figure. The defense claims the coal and oil cases are analogous because the only evidence in this case is that prices paid for gasoline were at or below the going competitive market, that in both cases the combinations were formed to deal with distress or surplus products, and that both actions were taken at times when the industries concerned were in the throes of depressions.

In the argument, both sides went "off the record" on several occasions, the jury being absent throughout the week.

H. E. Chaffetz offered one bit of information not produced in the evidence, declaring defense counsel "well knew" that long before the investigating grand jury was called last year Shell Petroleum Corp., was invited informally by the department of justice to come forward and assist the department in finding out the "true facts." A high executive of the company called on the department of justice, he said, and was told of complaints against practices of the major companies. He was asked to assist so "no compulsory methods would be necessary." The department waited for weeks, Chaffetz declared, but "did not even receive the courtesy of a reply."

The defense produced its off-the-record bit in criticizing the government for not placing Dr. E. R. Lederer, of the federal allocation board, on the stand. Dr. Lederer had been subpoenaed by the prosecution, but did not testify, and the defense claimed he could have thrown some interesting light on the situation.

Dr. Lederer has been subpoenaed as a defense witness. It was he, according to the evidence, who introduced Mr. Arnott to Neil Buckley, contact man assisting the East Texas Refiners Marketing association to find purchasers.

Another hotly disputed point was the attitude of Harold L. Ickes, secretary of the interior, toward the buying programs. Repeated statements of the defense that Ickes encouraged and sponsored programs under the petroleum code aroused the ire of Mr. Chaffetz. "The secretary of the interior knew nothing about these buying programs," Chaffetz declared.

A sequel to Chaffetz's argument came next morning when Mr. Dorr offered to the court Secretary Ickes' report for 1935, in which he said, among other things, that during the spring of that year, gasoline prices had "reached the desired parity."

Chaffetz, in his discussion, advanced theories regarding distribution of the proceeds from gasoline, which appeared, from the court's reaction, to strike Judge Stone as somewhat novel.

The government tried many experiments during

the early days of the recovery, not all of which worked, but it lay within the power of the government to try them under the old axiom that "the power to govern is the power to govern unwisely," said the prosecuting attorney.

"I'd hate to believe everything attempted under NRA should set the precedent for what private industry should be allowed to do for all time to come," he stated, adding that the government knew privileges granted under the original NRA had been abused and the new statute expressly stated that agreements in violation of the antitrust act would not be tolerated, as congress held such a course would lead to monopoly.

He then expounded the doctrine that the tankcar price of gasoline should be based upon the production cost of the least efficient producer.

He denied the code provided that the price of gasoline at the refinery should be based upon a ratio of 18½ to 1 in relation to the price of crude oil. Under this ratio, the defense claims a parity price of gasoline would be slightly above five cents a gallon with the posted price of crude at $1 a barrel at the time when the conspiracy was alleged to have started. During the three months in 1935 when prices were rising, allegedly by reason of the major companies' buying at artificially and progressively increased prices, the rate per gallon rose from a low of 3½ cents to between 5 and 6 cents.

"Would you say that the price of gasoline is outrageously unreasonable?" the court inquired.

"I certainly do," Chaffetz replied.

Query by Judge

"What part of the present price is unreasonable?" Judge Stone asked.

"I'd give more to the jobber and take it away from the refiner," said Chaffetz.

"Doesn't it seem as though the refiner ought to get as much as the man who transports the gasoline?" the court then inquired, asking particularly if 5½ cents was to be considered a fair return when shared by the land owner, the driller, the pumper, the pipe line transporter from well to refiner, and the refiner himself, compared with the 5½ cents shared by the jobber and retailer, the five cents in taxes, shared in Wisconsin at least by the state and federal governments, and the balance of the price per gallon which goes to the railroads.

"Certainly," Chaffetz answered, but he added that no economist knows the value of the many other products yielded by crude oil and contended that the increase in fuel oil returns alone should tend to bring down the price of gasoline.

Frederick Wood, counsel for Sinclair Refining Co., contended the government's own record shows the lack of uniformity of prices paid by major companies in purchases from independent refiners.

"It is the first time I ever heard of a Sherman act violation being charged," he said, "because larger units of an industry came to the rescue of the smaller ones."

The prices paid by the majors, he insisted, were "going market prices," and he argued not only that the government had failed to prove a price-fixing agreement, but that if there had been such an agreement there was no showing the major companies paid "high and arbitrary" prices. Moreover, Wood claimed, concerted action to influence prices is not in itself a violation of the Sherman act under the Appalachian case, and even if it were assumed the defendants entered into an agreement not only to stabilize but to raise prices it was not a violation of the law.

"We didn't make the price," he declared. "All we could have done was to influence the price. We did not lead the way up the steps of higher prices. We merely followed the procession."

At the most, the defendants were acting only to raise conditions from subnormal to normal, and to attain the objective laid down under the code for restoration of parity between the prices of crude oil and gasoline, he added.

Opening the government's argument, John H. Lewin indicated anew that the prosecution's chief reliance in the case is upon the documents subpoenaed from the files of defendant companies. He denounced witnesses called by the government as hostile, inferring they had been "carefully groomed" and "schooled," and his colleague, William P. Crawford, added to the denunciation. Many of them showed signs of "having just passed through a training camp for witnesses," Crawford said, and he heatedly denied they had been ill-treated before the grand jury.

"Thank God for these documents!" Lewin shouted. "They weren't carefully groomed and horse-shedded to take the witness stand."

"If I were the court," he declared, "I would be suspicious of the arguments of counsel when the documents and testimony directly refute their claims. And I would be suspicious of their law," he added, criticizing Wood for not mentioning the Trenton Potteries case which, he insisted, "is the one pertinent case."

Lewin's Argument

Contradicting Col. Donovan's argument that the government could not prove a single conspiracy by the alleged existence of two separate conspiracies in East Texas and the Mid-Continent, Lewin maintained "the two fields move hand in hand," and that C. E. Arnott was "at the top of both pools."

He charged the major companies superimposed a buying program upon the Connally "hot" oil act to stimulate an artificial demand, and compared a government price graph, showing weekly upward steps in prices of gasoline during the early months of 1935 as the "golden stairs to greed and avarice."

"I'm really fond of those golden stairs," Lewin said. "Every step in them can be accounted for by the price recommendations of Jacobi's committee."

Walter P. Jacobi's "mechanical subcommittee" recommended advances of ⅛ of a cent a week from March until early June, and the prices went up exactly that way, the government attorney declared, remaining unchanged throughout the rest of the year when the committee made no further "recommendations," and curving upward again by a half cent a gallon in January, 1936, when the committee recommended a half cent increase.

Lewin quoted several documents introduced in evidence containing references to "buying programs" and "weekly commitments," and to prove "how heartless this conspiracy really was," he read a letter from Jacobi to his superiors advising that jobbers were holding off in their purchases "because they don't believe the market will hold up. It is quite possible that they may be fooled this time."

"That's the heartless part. That's where they laid their cards on the table," Lewin said.

The letters in the case "completely annihilate" the contention that the two "pools" did not operate together, he maintained, declaring there was "overwhelming evidence" that the major companies were actuated by a purpose "to raise the tankcar price and reap the harvest through these iron-clad, iron-bound, cruel contracts imposed on jobbers, based on a little, insignificant spot market where the tail wags the dog."

Chaffetz, following him, assailed the defense claim of government sanction as a "sham and a fraud," introduced to "confuse the issue."

The defendants went into their buying programs knowing they couldn't get government sanction, with their eyes open, and knowing also that they might violate the law, he claimed.

"That's the risk they took. Our laws too often have gone unenforced because of the sob stories and excuses of people who violated them. These men had access to the best legal advice available. They are the last group in the United States who ought to be permitted to say they didn't know what the law was."

Chaffetz asked the court to rule that the NIRA and the code have no part in the case and their only effect could be to prejudice the government in the eyes of the public; and he asked the court to rule that the government had established a prima facie case of price-fixing, in the light of which the only issue remaining for the jury was the question of guilt or innocence.

The major companies, who control 85 per cent of the production in the two fields, and the independent refiners, who control the balance, were "in the scheme together," he charged.

"We have no business in this lawsuit," A. D. Gray insisted in his argument on behalf of the Gulf companies.

Evidence in the case includes "not a single piece of written material sent by other defendants to us, and any letters from us would have shown up in the files of other companies." "The truth is that none were sent and none were received. We don't assume people into criminal liability in this country, we have to put them there by competent evidence. I suppose because they formed an association in East Texas we should have gone out of business," he added.

"Mr. Gray has made a very persuasive argument, Mr. Chaffetz," the court remarked when the latter arose to reply. "There is much doubt in the court's mind as to the justification for submitting his case to the jury. I have felt for some time that the Gulf companies were on a somewhat different footing than most of these defendants."

S. A. L. Morgan of Texas Co., said: "There's not a scintilla, not an iota of evidence, direct, circumstantial or inferential, that connects the Texas Co. or any of its four indicted representatives with this case. They haven't put us in any meeting where they say this thing was hatched up."

Wrong Name

Bethuel M. Webster, counsel for Tide Water Associated Oil Co., which was dismissed from the case last week, argued on behalf of its indicted officials, Noel Robinson, E. L. Shea, J. W. Warner and R. O. Audrain, claiming that with the company out of the alleged conspiracy its officers no longer could be considered as "coconspirators." Most of the Buckley telephone calls listed to "Robinson" in New York, were to O. D. Robinson, of Republic Oil Co., Webster declared, not to Noel Robinson, and he pointed out that his company, on the basis of the government's own figures, never made a purchase in East Texas "above the market."

H. C. Walker followed in a plea for John A. Welch, sales manager of Louisiana Oil and Refining Co., also dismissed from the case. The company made only two purchases in East Texas during the period concerned, and neither was from the refiners' association, Walker insisted, in explaining a reply letter by Welch to a "gallonage" inquiry by H. D. Frueauff, vice president of Empire Oil and Refining. "We were not buying any distress gasoline, or at least if it was we didn't know it," he said.

Charges leveled at the prosecution for its alleged attempt to win the case on inferences were enlarged upon by T. W. Brazeau, Wisconsin Rapids, counsel for Empire and Cities Service, who pleaded on behalf of H. E. Brandli, vice president and general manager of Cities Service Export, employer of Buckley. Buckley's testimony he said was not sufficient to convict Brandli, whose only participation, was that he wished Buckley "good luck" in his efforts to help the East Texas refiners.

Argument on behalf of E. B. Reeser, president, and Barnsdall Refining Corp., was made by Glenn W. Stephens, Madison attorney, who said that when Julius Evans, secretary of the company, informed Reeser of distress gasoline offered for purchase, Reeser replied only that the company "was always buying gasoline anyhow, and he had no objection to buying some distress gasoline if it fitted into the picture." Nevertheless, Stephens said, the Barnsdall purchases during the "conspiracy" year were less than in any other year, before or afterwards.

"The Barnsdall Oil Co. never attended any meet-

(Continued on Page 41)

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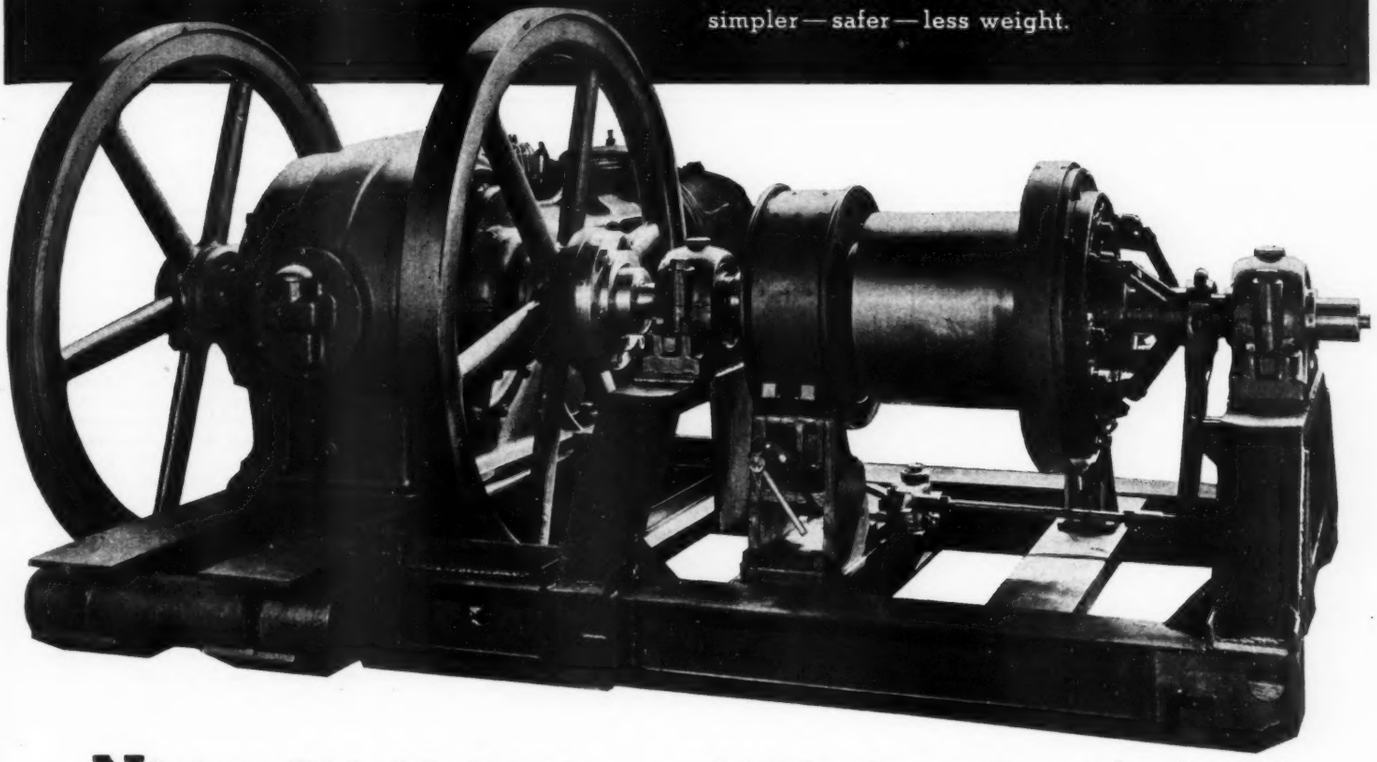

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Pipe Line Activity

Louisiana Standard Completing Its Coastal Louisiana System

BATON ROUGE, La.—With construction in its final stages, Standard Oil Co. of Louisiana is ready to place in operation its 150-mile pipe line system in Coastal Louisiana which extends from the company's refinery at Port Allen, opposite Baton Rouge to Roanoke in Jefferson Davis Parish and a south terminus at Jeanerette in St. Mary Parish.

The system, electric welded, consists of a main line of approximately 100 miles. It is a combination composed of 46 miles of 6-inch pipe from the Roanoke field to a pump station at Sunset; 32 miles of 8-inch pipe from Sunset to a junction between Lottie and Lavonia in Point Coupe Parish on the west bank of the Atchafalaya River and 22½ miles of 10-inch from this junction to Port Allen. From Sunset junction to Jeanerette the south branch consists of 15 miles of 8-inch to Breaux Ridge in St. Martin Parish and from this junction to Jeanerette there is a 35-mile section of 6-inch.

Contract was let to Williams Brothers (Apex Construction Co.) which started construction September 1, working out of Jeanerette toward Sunset. The second gang was started working September 15 eastward from Port Allen to Lottie where a third crew was started at the same time from Lottie Junction to Sunset. Stringing of the pipe was subcontracted to Parkhill Truck Co. while welding was subcontracted by H. C. Price, Inc.

Exceptionally fast time was made as 20 or 30 small bayous, irrigation and drainage canals had to be crossed. Excepting these crossings and a 25-mile stretch of swamp country between Sunset and Lottie, the right of way traverses a cultivated area of sugar cane plantations and rice farms. About 50 miles was through heavily timbered country. Little trouble was encountered in crossing the swampy section as the crossing was made when most of the section was dry and only 3 miles were under water. The stove-pipe method was used.

Through the Intracoastal Canal and the network of navigable bayous, it was possible to move the pipe by barge to advantageous locations. This speeded construction as the pipe had to be trucked only a short distance. The pipe was coated and wrapped on the job. The coating consisted of a heavy coat of grease followed by an asbestos wrapper spirally wrapped and another heavy coat of grease applied to relieve soil stress.

The major crossings were at the Atchafalaya River, Cortableau Bayou and Bayou Teche. The latter stream was crossed four times. In crossing the Atchafalaya which is approximately a mile wide having a depth of 85 to 90 feet and an unusually swift current it was necessary to use three large barges. The head in section was placed on one barge and the balance of the pipe was swung under two other barges floating into position with a slack curve of about 300 feet up stream. As the two barges floated into position the pipe was lowered to the bottom. U bends on rollers were installed on each side of the river about 300 feet back from the water's edge which allowed the pipe to feed into the river as the bottom washes out and changes. Using U bends allowed additional pipe to slide into the river without parting the line.

The line will give a much needed additional pipe line outlet to the active Jennings field in Acadia Parish. It will give a second outlet to the deep Roanoke field in Jefferson Davis Parish and will serve the New Ibera and Jeanerette fields in New Iberia and St. Mary parishes which until the past few months depended upon water transportation. The right of way is within a short distance of several additional fields and extensions may be provided later. The oil from the four fields will be boosted through the system by four pump stations, at Roanoke, Jeanerette, Crowley and Sunset.

Contract Let for 22 Miles of Gathering Lines in Billings

To supply natural gas to a new casinghead gasoline plant now being built for the Continental Oil Co. in the Billings field, Oklahoma, a contract has been awarded to J. F. Prichard Co. to lay approximately 22 miles of from 20- to 4-inch gas gathering system through the Billings field. The pipe will be welded by the lindeweld method. Stearns Rogers Co., of Denver, Colo., has the contract for the erection of the natural gasoline plant.

Texas Contest on Measurement Of Oil Storage Withdrawn

AUSTIN, Tex.—Withdrawal of contests by pipe line companies of a Railroad Commission rule requiring measurement of oil storage tanks on 100 per cent tank tables was announced by Attorney General William McCraw.

For many years pipe lines purchasing oil computed the amount on 99 per cent tank tables with 1 per cent deducted for strappage, wastage and unmarketable quantities. Several months ago the strappage rule was revised to require 100 per cent computations.

Texas Pipe Line Co. contested the rule, which was upheld after trial by the federal district court. An appeal perfected to the circuit court of appeals at New Orleans, was dismissed on the company's motion. Another company attacked the order in a state district court but did not appeal after it was refused an injunction.

Tacking together three lengths of pipe

Negotiations for Purchase of Atlas Line by Lion Oil

FORT WORTH, Tex.—Negotiations are under way for the purchase of the controlling common stock of Atlas Pipe Line Corp., Shreveport, La., by Lion Oil Refining Co. of El Dorado, Ark.

Atlas owns and operates a trunk pipe line from the East Texas field, terminating at Longview, via Shreveport to El Dorado, through which it has been delivering East Texas crude to Lion Oil Refining Co. refinery at El Dorado for several years.

To Lay 30 Miles of Gathering Line Near Odessa, Texas

White Deer Pipe Line Construction Co. has been awarded contract for approximately 30 miles of gathering lines to be used in connection with a gasoline plant to be built for the Barnsdall Oil Co. near Odessa, Tex. Twenty-seven miles of pipe from 10-inch to 2-inch diameter will be oxyacetylene welded by the lindeweld method.

Rodessa, Arkansas, Proration Is Delayed Until January

SHREVEPORT, La., Nov. 22.—Arkansas Board of Conservation announces that its proration order on Rodessa will be delayed until January 1 instead of December 1 as before ordered. This is the third delay in prorating Rodessa, Arkansas.

Natural Gas News

Model Gas Proration Order To Be Tested in Courts

AUSTIN, Tex. — A proposed model gas proration order effective December 1 in the East Panhandle sweet gas area has been presented by the Railroad Commission. A new formula would allocate two-thirds of the allowable on acre-pounds factor computed by multiplying the acreage times pressure and one-third of potential.

The Panhandle gas field has not been under proration since spring when the Supreme Court of the United States invalidated a commission order allocating production one-half on acreage and one-half on potential. Allowables for the East Panhandle area will be contained in the new order and will be based on nominations adjusted to actual production.

Only one area of the field will be covered in the new order as the commission decided it would save expense and work to omit other areas pending a court test of the validity of the new method. If the new formula is upheld, similar orders will be issued for the West Panhandle sweet and sour gas zones.

Two Additional Helium Wells May Be Drilled

WASHINGTON, D. C. — Helium supplies should be increased to meet medical and aviation needs, a report to Secretary Ickes said. Dr. John W. Finch, Bureau of Mines director, made the report, suggesting that two additional helium wells be drilled in the government's natural gas field, Cliffside, Texas.

Gas Rate Hearing Scheduled For Three Ontario Villages

ST. THOMAS, Ontario.—The Natural Gas Referee for Ontario will shortly conduct a hearing on an application by E. S. Livermore, representing the villages of Rodney, West Lorne and Dutton, for a reduction in the rates charged by Southern Ontario Gas Co. Present rates range from 85 cents per 1,000 feet down.

London, Ontario, City Council To Regulate Gas Heaters

LONDON, Ontario.—Drastic amendments to the municipal plumbing bylaw to restrict the type of gas heaters that may be installed, regulate installation methods and provide for more thorough inspection are being recommended to the London city council by the board of health. With one exception the proposals have been approved by the City Gas Co. The proposed measures are designed to prevent the use of dangerous or inefficient devices.

Refinery Expansion

Shell Deer Park Refinery Is Shut Down by Strike

HOUSTON, Tex., Nov. 22.—Shell Petroleum Corp.'s 76,000-bbl. refinery at Deer Park, was shut down at noon November 19 as the result of a strike vote taken the previous day. Approximately 1,200 plant workers are idle, leaving only a skeleton force to protect the plant against fire. A normal clerical force remains at the offices. No violence has resulted, the men leaving their work in an orderly manner and the company indicates it has no desire to operate the plant with outside help.

Of the total number employed 900 are members of the Oil Workers International, a CIO affiliate. These men voted to strike as a means of hastening acceptance of a working contract which company officials refused to sign until after similar negotiations at the company's East Chicago, Ind., plant were completed.

Awaiting a solution, 32 pickets are stationed outside the refinery site. Inside the plant and in Houston numerous conferences are being held attended generally by T. J. Elder of Chicago, formerly superintendent of the refinery; J. L. Miller, present superintendent: William Mullemeister, manager, and Dr. R. H. Waser, all representing the company. Representing the union are J. E. Crossland and J. E. Benson of the local branch and Dr. D. R. Stuart for the International Union.

The officers of the company have indicated surprise that the strike vote favored shutting down the Deer Park plant as the company has concentrated a large portion of its expansion work there. The personnel of the refinery had been increased materially over the past five years and through the addition of more cracking capacity, an isooctane unit and auxiliary units, an opportunity for advancement among the operators has been afforded.

Apparently the desire of the company to effect an agreement at the East Chicago plant before signing a contract at Deer Park is the result of long negotiations between A. E. Lacombie, vice president of Shell, and Harvey C. Fremming, president of Oil Workers International Union.

Efforts of the international to effect a contract among all refining units of Shell are being discouraged by the company in favor of dealing with union units established at each plant, the company indicating it will deal with any representative group recognized by the National Labor Relations Board. The problem of dealing with all plants under a common contract, as desired by the International, is complicated by the fact that at least one large Shell plant is unionized under the craft system.

The Shell company has announced that it will continue its purchases of crude oil despite the refinery shutdown.

Shoreline Oil Co.'s Plant Is Shut Down Due to Walkout

SHREVEPORT, La.—Approximately 150 workers in the Shoreline Oil Co.'s refinery at Lewis, La. (12 miles south of Rodessa), are now out on strike. The plant was shut down Sunday morning, November 14, and has been continually picketed since that time. Continued recognition of the union by the company, and not any wage or hour difficulty, is given by the workers as the issue.

Small Refinery to Be Moved To Rotan Field, Texas

FORT WORTH, Tex.—F. E. Patton, owner of the Post Refining Co. plant in Garza County, Texas, has announced that the small refinery will be moved to Rotan, Fisher County, Texas, to provide an independent outlet for the field. Announcement that Shell Petroleum Corp. would discontinue purchases in the Rotan and Howard fields left the pool without adequate outlets. Plans call for the plant, of 600 to 700 bbls. daily capacity, to be in operation by the middle of December.

Company Officials Inspect Canadian Refinery

SARNIA, Ontario.—Officials of Imperial Oil, Ltd., and the Standard Oil Co. of New Jersey recently conducted a two-day inspection of the Imperial refinery here. The New York party included T. C. McCobb, director Standard Oil of New Jersey; F. W. Abrams, in charge of that company's United States operations, and G. W. Gordon, in charge of various foreign manufacturing operations; together with Richardson Pratt, E. A. Holbein, H. L. Shoemaker, Dr. N. E. Loomis, H. S. Snyder and R. White.

L. C. McCloskey, vice president in charge of manufacturing operations for Imperial Oil, and Thomas Montgomery, chief engineer, accompanied the United States party from Boston, and G. L. Stewart, general manager of Imperial Oil refineries, and N. C. Copeman, assistant manager, joined the party at Toronto.

Plan Construction of New Plant at Pueblo, Colo.

DENVER, Colo.—Plans for the construction of a new refinery at Pueblo, Colo., have been announced by Universal Oil Refining Co. of Amarillo, Tex. Jack Harris, president, and H. S. Newman, superintendent of the company, are completing negotiations for the site of the proposed plant.

Cosden Adding New Cracking Unit at Big Spring, Tex.

FORT WORTH, Tex.—Cosden Petroleum Corp. has announced that another cracking unit is being added to its Big Spring, Tex., refinery which will double its present cracking capacity. The new unit will have a daily capacity of 7,500 bbls., and involves an expenditure of approximately $600,000. Installation of the unit is now under way, with completion expected around April 1, 1938. Total cracking and skimming capacity, upon completion of the new unit, will total about 17,000 bbls. per day.

Natural Gasoline

Phillips New Goldsmith, Tex., Plant Nearing Completion

FORT WORTH, Tex.—Phillips Petroleum Co. as operator for the Phillips-Landreth natural gasoline plant in North Ector County, Texas, Goldsmith field, is nearing completion of its 100,000,000-cubic-foot plant in that field. The plant is expected to have a daily yield of about 60,000 gallons of gasoline. An experimental polymerization unit in connection with natural gasoline plants is also being built there.

Warren Petroleum to Build Plant in Aransas County

Warren Petroleum Co.'s plans for the construction of $350,000 natural gasoline plant near Port Aransas in Aransas County, Texas, are being completed. From 60,000,000 to 75,000,000 feet of gas per day will be processed in the plant, extracting approximately 30,000 gallons of gasoline daily. Gas will be supplied from the McCampbell field in Aransas and San Patricio counties where a large reserve is available. Construction is scheduled to be started within the near future.

Large Plant May Be Built In Cayuga, Texas, Field

FORT WORTH, Tex.—A new and large gasoline plant may be built soon in the Cayuga field, contingent upon the success of an experimental gas repressuring project which is to be started immediately by Tide Water Associated Oil Co. in the Cayuga field of Anderson County, Texas. An experimental plant is being built, using one 400-hp. engine and compressor, taking gas from the Lower Trinity gas-producing zone, stripping it of its natural gasoline, and returning it back into the Woodbine sand, principal oil-producing horizon at Cayuga. Should this experiment prove successful, a new gasoline plant and compressor station will be constructed to continue the Woodbine sand repressuring as a permanent project.

Formal Opening of New Talco Plant Held at Mount Pleasant

MOUNT PLEASANT, Tex.—Four leading Texas independent oil operators were the center of interest as over 2,000 oil men and representatives of other industries converged on Mount Pleasant, November 18. Partners in the newly completed Talco Asphalt & Refining Co. plant, around which the celebration was held, were Capt. J. F. Lucey, D. Harold Byrd, Jack Frost and Ralph E. Fair, all of Dallas. Special trains were run from Dallas, Tyler and Paris, bringing hundreds to attend the formal opening of the new 7,000-bbl. plant.

Due to the rainy weather, ceremonies were conducted in a large tent erected on the 75-acre refinery site, Claude McDonald, mayor of Mount Pleasant, presiding. Principal speakers included: Harry Hines, chairman of the Texas Highway Commission; John Wood, member of the highway commission; Nathan Adams, president of the First National Bank, Dallas; Lon Smith, member of Texas Railroad Commission; C. C. Rockenback of the St. Louis Southwestern Railway; Kirby Post and W. F. Murray of the Cotton Belt; and Z. E. Hays, vice president of the Republic Bank, Dallas. Captain Lucey and Messrs. Byrd, Frost and Fair also spoke.

Construction of the plant was started in January of this year, with partial operation starting in June. Now, upon the completion of the 5,000-bbl. Dubbs cracking unit the plant is processing some 6,500 bbls. daily, producing principally gasoline, road oils, asphalt fluxes and specification asphalts.

E. E. JACKSON
Sales manager

J. K. MacKINNON
General manager

JINX JOBS

'STARCOR' TAKES THE CURSE OFF 'EM

SOME jobs just seem to be jinxed. Plan 'em as carefully as you will—still things go wrong. Just cussedness, maybe. Take this one, drilled recently in San Patricio County, Texas —5800 ft. of 5" casing in a 6½" hole. Only about half an inch between casing and wall of hole for cement to flow through—and don't forget the collars. But the crew knew its stuff—and everything would have been o.k. if the jinx hadn't stepped in.

Mud pumps went out twice. Measuring line snapped as it was introduced in the hole. Flow line developed a leak. Small things, but they all took time, and a 45-minute job dragged for two hours. Ordinary cement might easily have set, long before it reached bottom—and then the fat would have been in the fire for sure.

Lucky they used 'Starcor'. Because this Oil Man's cement is timed to set slowly—allowing ample leeway in case of delay. The safety factor is built into the cement itself. Use 'Starcor'* on your next deep-well job. On wells of moderate depth, use 'Incor'*—it's an Oil Man's cement, too—with a ten-year success record on thousands of wells. Your nearby dealer stocks them both.

*Reg. U. S. Pat. Off.

TWO PORTLAND CEMENTS—BOTH MADE FOR OIL WELLS

USE 'STARCOR'—for deep wells, high temperatures or extra sulphate resistance.

USE 'INCOR'—for wells of moderate depth.

MADISON

(Continued from Page 36)

ing and never agreed to take any specific amount of gasoline at any specific price, the attorney continued. "We never wrote a letter and never received a letter connecting us with this case. There are no telegrams, no records of telephone calls. There has been nothing but a lot of hearsay testimony, such as that of Jacobi that 'McDowell was to keep Evans advised,' and that he 'feels sure' McDowell did so, but no active participation of any kind by Mr. Reeser has been shown."

Jack W. Carnes, vice president of Sinclair Refining Co., was not present at Ashton's meeting, nor was any other representative of the company, Frederick Wood informed the court, and there is not a word of testimony that Carnes ever knew of the plan discussed there, assented to it, or consented to join in it he said.

Wood presented the company's own tabulation of Sinclair company's purchases in the Mid-Continent field, in the absence of computations by a government investigator who testified he had not had time to do so. During the three months before the alleged conspiracy, they showed, Sinclair purchased an average of 445 cars a month, while during the three months when prices allegedly were increased by major company buying, they averaged 447 cars a month or "substantially the same."

In the 14 months of the indictment period, the company bought 5,247 cars from independent refiners compared to 11,384 purchased by all other defendant companies combined, its purchases totaling nearly five times those of Standard Oil and eight times as much as those of Pure Oil and Shell. And in addition to this Sinclair bought 1,000 cars from other major companies, Wood said.

"Does this look as though each company bought "it's fair share?" he demanded. "Why, if we didn't need this gasoline, did we buy 1,000 cars at the same time from other majors?"

The company bought not only from four of the 14 independents described in the indictment, but from 25 other independent refiners in the field, and in fact from "every available source," he said.

"Suppose you did need it, and still judiciously switched enough orders to places where it would do the most good. Wouldn't you be guilty of conspiracy?" Lewin asked.

"The trouble with this whole case is that it is built on supposition," Wood retorted.

Possible Purchasers

As to the alleged East Texas conspiracy, he said Carnes was shown by the testimony to have read a list of possible purchasers at a meeting in New York, but nothing was agreed upon at that meeting, "and there the government's evidence ends."

Wood also recited his company's purchases during the winter of 1935-36 to contradict the government's charge that increased purchases followed the Shell letter forecast of a "heavy buying movement in December."

In October Sinclair bought 454 cars, in November 377 cars and in December "cut its purchases in two" to 182 cars, he declared.

Samuel T. Mitchell made only a brief argument on behalf of the Shell corporation and its two indicted officers, Alexander Fraser and P. E. Lakin, and W. L. Cunningham asked dismissal for Clyde M. Boggs, president of the Western Petroleum Refiners association. Boggs was an invited guest at Ashton's St. Louis meeting, Cunningham said, but after that, as far as the evidence goes, his client "departs from the scene."

There is no evidence that any refiner curtailed production as a result of Boggs' activities, and as he was a member of the allocating committee for that area it was natural he should be consulted in regard to economic conditions, his attorney said.

"Is furnishing information a violation of the law?" Cunningham asked.

"Boggs had no surplus gasoline to sell and he never sold any. It is an unreasonable inference to connect him with the case by reason of the St. Louis meeting. We were all doing all we could to help the industry."

Gulf and Texas Dismissals

After considering arguments and briefs over the week-end, Judge Stone Monday granted dismissal motions of the Gulf Oil, Gulf Refining and Texas companies. He also dismissed W. S. S. Rodgers, president of Texas Co.; R. D. Cottingham, assistant to the president; H. W. Dodge, vice president in charge of sales; and P. C. Scullin, vice president and general manager of the Indian Refining Co., a subsidiary. His ruling, however, did not apply to the four Gulf officials, John F. Drake, president; William V. Hartman, vice president; H. C. Meyer and O. H. Carlisle, who resisted removal to Wisconsin and are not on trial pending appeals. Pleas were made on behalf of Frank Phillips, Jacob France, W. G. Skelly, Dan Moran, E. G. Seubert and Henry M. Dawes.

H. W. DODGE

W. V. HARTMAN

Replying to the contention that all indicted companies had bought gasoline from independent refiners for many years, John H. Lewin, of the prosecution staff, declared their purpose was to obtain "coordination" in place of the "haphazard" purchasing that had been done previously.

"That is the vital thing in this whole case," he argued.

Lewin inferred there was something peculiar about the failure of government investigators to find incriminating letters in the files subpoenaed from some of the indicted companies.

There were telegrams in evidence, but no answers, he noted, and charged companies boasting that "our files are clean" should be ashamed rather than proud of the fact.

"If you have papers in your files you're guilty, and if you haven't papers in your files you're guilty," J. C. Denton interjected sarcastically.

Asking dismissal for the president of Mid-Continent, Denton pointed out that Mr. France was absent in Florida early in 1935 at the alleged inception of the conspiracy and that the vice presidents, Robert W. McDowell and Thomas Fitzgerald, were in full charge of their departments.

Weymouth Kirkland, counsel for Standard Oil of Indiana, argued there wasn't a letter from a Standard Oil official in evidence and not a "single scrap of paper" in the entire case from which it might be inferred the company was party to any conspiracy. The government's entire case, he said, is based upon an alleged "great change" in the course of conduct by the companies in purchases of gasoline, but he insisted Standard Oil bought no distress gasoline, that purchases were made consistently from the Waggoner Refining Co., a substantial independent with storage facilities which made dumping of its products unnecessary, and that its purchases during the alleged conspiracy years had been made, exactly as they always had been made, under the same price arrangement at the "low" of the published market.

Knowledge of the alleged "buying program" cannot be imputed to President Seubert and Vice President Allan Jackson, merely on the ground that they were "in a position to know," Kirkland said, and even if Bullock, who was vice president in charge of purchases, knew about such a program "there is not a scintilla of evidence that he helped in the plan."

Charles I. Francis, attorney for Pure Oil Co., conceded the case would have to go to the jury as relating to R. H. McElroy, Jr., who was in charge of tankcar purchasing, as evidence showed he attended a meeting called to discuss purchasing from independent refiners, but there is no mention of Henry M. Dawes' name among hundreds of letters, he said, nor any evidence that Dawes or C. B. Watson, vice president, had any knowledge of a price-fixing program. There was no evidence that Watson attended any meetings to which he was invited and while McElroy represented Watson at one meeting, he was not authorized to make any commitments, Francis argued.

Amos L. Beaty argued on behalf of Frank Phillips, admitting evidence for consideration in respect to H. A. Gardner, F. L. Koopman and A. M. Hughes of Phillips company, but said there was nothing to show any of the letters admitted against them had come to attention of Mr. Phillips. The company president was absent from Bartlesville about half of the time, Mr. Beaty pointed out, declaring the government has not shown Phillips "had written or received a single letter" and that he was not mentioned in connection with any meeting. He referred to a letter bearing the name of a Phillips company official recommending "no purchases" and that the company "let the market take its own course" as indicative of innocence, and interpreted two other letters recommending cancellation of a contract with Barnsdall in favor of buying to "support the tankcar market" as subject to nothing more than "inferences."

While announcing he would let the case go to the jury in regard to L. T. Cramer, tankcar buyer for Continental Oil Co., connected with the alleged buying program by documentary evidence, Attorney William H. Zwick argued on behalf of President Moran and Vice President Harry J. Kennedy. Moran spent most of his time on the Gulf Coast and his particular work as an engineer was in the production department, Zwick explained, declaring also there was no mention of Moran in any documents.

Attorney W. P. Z. German demanded, "What place does Skelly have here?" President Skelly of the Skelly Oil Co. was not mentioned in any document, he said, and it was not shown he was present or that the company was represented at any meeting. James Nagle, of the wholesale sales department, was in direct charge of Skelly purchases from independent refiners, made over a period of many years, German said, and was not required to obtain authority from the directors.

Drilling for oil by the California Co. on the Kamp farm, C NW NE section 3-154n-96w, 16 miles south of Ray, Williams County, North Dakota, in the Nesson Valley flat is reported under way. The rig is a modern up to date steam drilling rig.

INTERNATIONAL

Skelly Oil Is Interested in San Domingo Concession

Skelly Oil Co. has taken an interest in a concession covering 500,000 acres in San Domingo by Clem S Clark, independent operator of Shreveport, La., and son of Cal Clark, deceased, former president of Standard Oil Co. of Louisiana. Mr. Clark secured the concession from the Dominican government in October and interested the Skelly company into going into partnership if results from exploratory work warrant.

With Mr. Clark the company is preparing to undertake geological work mostly of a reconnaissance type. They are assembling a rotary drilling rig and crew and in a couple of weeks Joseph E. Morero, chief geologist of Skelly Oil Co., will leave for the Dominican Republic with two other geologists. The rotary rig is not capable of drilling below 3,000 feet. M. W. Mathews, assistant superintendent of the Oklahoma City area for Skelly Oil Co., will head the party of drillers. The concession lies in the province of Azua in the southwest corner of the republic.

The concession has been under concession to other concerns in the past. Oil seepages are found on the properties and several core holes have been drilled. One well was drilled to 900 feet in 1904 and is reported to have shown some oil. Texas Co. did some work in the republic 10 years ago.

Mexican Eagle Says Deal Is Pooling Not Royalty Plan

Full details of the agreement between the Royal Dutch-Shell owned Mexican Eagle Oil Co. and the Mexican government are not yet available, but the company said the deal is "essentially a pooling arrangement" rather than a royalty transaction. Later it was reported from Mexico City that Royal Dutch-Shell has agreed to lend the government $5,000,000 against future oil production from the land in the Poza Rica field on which confirmatory concessions have been issued to Mexican Eagle.

The company's statement said the agreement had been made to "prevent improper and extravagent exploitation of the field and constitutes an out of court settlement between the two parties of certain rights in dispute between them. The question of any royalty being paid on confirmatory concessions does not arise and is not part of the agreement since such concessions are not legally subject to any royalty."

The company said the 15 to 35 per cent oil production to be turned over to the government was in exchange for dropping the court fights and in this country would be termed a "carried interest." With the $5,000,000 advanced by Shell, it is understood other British owned companies will construct pipe lines, add to refineries and carry on drilling operations on the acreage involved.

Mexican Eagle obtained confirmatory concessions to about 7,700 acres of potential oil land in the Poza Rica field, the largest source of petroleum in Mexico at present. For years Mexican companies have contended confirmatory concessions by the government were not necessary under Mexican law in the case of leases taken prior to enactment of the law reserving mineral rights in all lands for the government.

Bolivia and Argentina Reach An Agreement on Petroleum

An agreement reached last week between Bolivia and Argentina gives Bolivia tax-free access to Argentina, together with the right to construct facilities to transport the Bolivian petroleum to deep water.

One provision states transport rights no longer shall apply if the oil fields again come under private control. Standard Oil Co. of New Jersey originally held exploration rights on 2,500,000 acres in Bolivia, but the concession was cancelled last March, climaxing contentions between the company and government over eight years. As long as the Bolivian fields were in the hands of Standard Oil Co. of Bolivia, the Argentine government declined to grant access to its coast line.

The Chaco war was attributed chiefly to Bolivia's desire to find an outlet for her petroleum. Her fields, largely leased to Standard of Bolivia, had no outlet to world markets. Argentina and Paraguay would not permit construction of pipe lines and outlets could not be carried over or through the western mountains. Bolivia, claiming Chaco, tried to force her way to the Paraguay River.

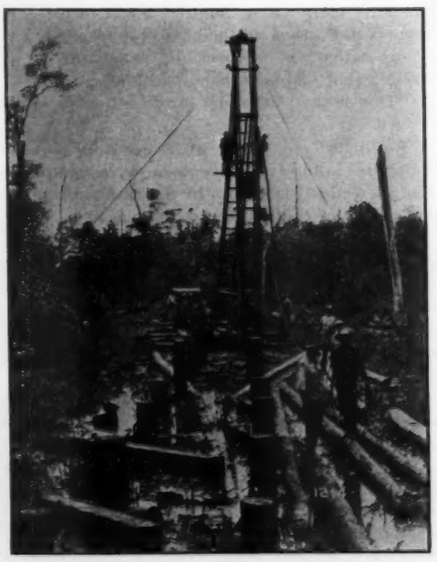
Italy Offering Subsidy for Use of Gasogene Fuel

Extending its efforts toward self-sufficiency in motor fuel, Italy has offered a special subsidy of 18,000 lire for each motor vehicle in use which may have been transformed over to gasogene fuel. Three-fifths of the subsidy will be paid immediately following the transformation, while the remaining two-fifths will be paid a year later, provided the vehicle be still in regular and satisfactory service. All public buses and motor carriers have been ordered converted to gasogene operation by December 1, 1937, and the subsidy is expected to attract owners of commercial vehicles which might otherwise delay indefinitely transformation of equipment.

The decree does not apply to vehicles whose cylinder volume is inferior to 2,500 cubic centimeters or to those unsuitable for efficient operation for 1938.

Gasogene vehicles, which have been tested in Italy, operate on charcoal and coke or compressed natural gas obtained from national sources. In addition Sugar Beet Corp. in Italy has been provided with means for producing enough beets to supply a blend of 20 per cent alcohol with gasoline. A blend of ethyl alcohol and castor oil is also receiving government sponsorship in operation of diesel engines to the full extent of the castor oil supply.

Despite extraneous decrees by the government, there remains a wide deficit in the national motor fuel production program and the consumption. The country is preparing to use its resources of calcareous asphalt and bituminous schists in one of two hydrogenation plants now under construction. Hydrogenation of heavy Albanian crude oil in still another plant now under construction will go a bit further to relieve the import requirements. Italy's hydrogenation program is definitely limited due to the lack of abundant coal deposits.



Building railroad trestle for hauling drilling material through swamp, Pedernales, eastern Venezuela

Inland Wildcat to Be Drilled In North Central Venezuela

A full compliment of rotary drilling equipment has been dispatched from the United States for drilling an isolated, inland wildcat in the north central part of Venezuela. The test is to be drilled by Guarico Oilfields (Venezuela) Ltd., a joint corporation formed by Caracas Petroleum Co., which is an Alfred Meyer interest, and Central Mining Co. of London, in turn interested in Trinidad Leaseholds, Ltd., North Venezuelan Petroleum Co., and Tucoyo Oilfields. The location is approximately 75 miles west of Valle de La Pascua in the state of Guarico.

Operators plan to transport the drilling equipment up the Orinoco River to Calcara, about 150 miles west of Cuidad Bolivar, and overland north to the location. The territory to be explored is considerably west of any drilling previously in east and east central Venezuela by Mene Grande Oil Co. and Standard Oil Co. of Venezuela. One of the most closely watched wildcat tests now drilling in Venezuela is Standard Oil Co. of Venezuela No. 1 El Roble, a little north of a straight line and about midway between Cantaura and Aragua de Barcelona, currently drilling slightly below 4,050 feet.

Although October production in Venezuela, estimated at 17,547,297 bbls., set another record, there was a decline in daily average to 566,042 bbls. The October total was 124,936 bbls. greater than in September, but daily average was 14,703 bbls. less. A more accurate reflection is comparison with October, 1936, when Venezuela produced 13,600,537 bbls., a daily average of 438,727 bbls., which was 3,946,760 bbls. less in the aggregrate than for October this year.

The Tia Juana field, north of Lagunillas on the shores and under the eastern submerged portions of Lake Maracaibo, is largely responsible for the increase although La Rosa and Pedernales have shared as has Lagunillas in boosting 1937 production to new records. So closely related is La Rosa with the new Tia Juana field that some producers are making no distinction, accounting in part at least for the increase credited to the La Rosa field.

Resumption of drilling activity in La Paz, northwest of Lake Maracaibo, was reflected in October. Venezuela Oil Concessions, Ltd., produced 51,503 bbls. in October compared to a range of 10,000 to 12,000 bbls. during previous months for more than a year and a half. With more than 1,000,000 bbls. produced from Tia Juana last month, Venezuela Oil Concessions is starting to push Lago Petroleum Corp. for top place in the producing companies. Lago's production combined with that of Standard of Venezuela gives subsidiaries of the Standard Oil Co. of New Jersey aggregate of 8,515,542 bbls. for the month, however, and maintains this group far in the van of the other producers, with about 48 per cent of the total to its credit in October.

VENEZUELA OIL PRODUCTION

(By fields in barrels)

Field—	October 1937	October 1936	Dly. ave. Oct., 1937
Lagunillas	8,252,101	7,416,161	266,197
La Rosa	2,251,256	1,914,064	72,621
Quiriquire	2,246,152	2,217,368	72,457
Tia Juana	2,641,015	.....	85,194
Mene Grande	1,244,994	1,279,990	40,161
Tarra	386,168	335,420	12,457
Cumarebo	198,545	203,825	6,405
Pedernales	131,215	29,140	4,233
Concepcion	87,835	88,598	2,833
El Mene	56,513	103,323	1,823
La Paz	51,503	12,648	1,661
Total	17,547,297	13,600,537	566,042
Daily average September, 1937			580,746
Total September, 1937			17,422,361
Daily average October, 1936			438,727

(By companies)

Lago Pet. Corp.	5,570,794	4,574,352	179,703
Ven. Oil Concessions	5,232,444	3,119,300	168,789
Std. of Venezuela*	2,944,748	2,828,191	94,992
Mene Grande Oil Co.	2,062,000	1,309,000	66,516
Caribbean Pet. Co.	1,244,994	1,279,990	40,161
Colon Dev. Co.	386,168	335,420	12,457
British Controlled	56,513	103,323	1,823
No. Venez. Pet. Co.	49,636	50,961	1,601
Total	17,547,297	13,600,537	566,042

*Includes Creole's share in Lagunillas and La Rosa.

ENGINEERING AND OPERATING SECTION

Presenting modern developments in operation of producing properties, refineries and gasoline plants, and pipe lines, including petroleum research in the field and laboratory

This Week

VAN POOL BEING DEVELOPED SCIENTIFICALLY THROUGHOUT ALL STAGES OF PRODUCTION — By Mitchell Tucker ..... **Page 44**

The Van pool of eastern Texas is an outstanding example of development and operation under unit control, particularly with respect to recovery, pressure maintenance, and low development and operating costs. Manner of allocating daily production, gas-oil ratios, drilling programs and other factors contributing to its efficient operation are described.

ILLUSTRATED OPERATING IDEAS ..... **Page 53**

Reservoir for brake cooling water. Work bench for pipe line station. Novel tool rack pedestal. Unloading fuel oil for drilling engine at well location. Small pump for moving oil actuated by geared unit.

GROUND OYSTER SHELLS PROVING VALUABLE IN DRILLING MUDS—By T. P. Sanders ..... **Page 54**

By adding pulverized oyster shells to drilling muds, California operators have found that the mud is made more susceptible to attack by hydrochloric acid. Carbon dioxide liberated in the reaction serves to agitate the acid and helps to dislodge the mud sheath from the walls of the oil-bearing formation.

CONTROL OF COPPER SWEETENING CENTRALIZED IN FEW VARIABLES—By Walter A. Schulze and A. E. Buell ..... **Page 56**

Refiners in recent years have made decided progress in improving the quality of their sweetened gasolines and in lowering treating costs and losses. Here, some important factors of the copper sweetening processes, such as effects of temperature and concentration of the copper solution on the finished gasoline, as well as the volume of air required at the point where the sweetening reaction takes place, are described.

VACUUM DECOMPOSITION OF PETROLEUM RESIDUES —By W. L. Nelson ..... **Page 62**

By use of vacuum decomposition products varying widely in boiling points may be obtained from asphalts and heavy stocks. Two important products resulting from the application of vacuum decomposition are neutral stocks and diesel oils, both of which are finding an increasingly good demand.

PROBLEMS FROM READERS—By L. G. E. Bignell **Page 66**

Regulations for installing storage tanks in city limits. Filing miscellaneous pamphlets and catalogs by the color band system of identification. Duties of an oil gauger. Comparison of wildcat successes.

QUESTIONS ON TECHNOLOGY — By C. K. Francis, Ph. D. ..... **Page 69**

Reynolds number for study of liquid flow. Color inhibitors for kerosene. Classifying lubricating oils involves both their use and viscosity. Chemicals for the petroleum industry—salt (sodium chloride).

Van Pool Being Developed Throughout All Stages of

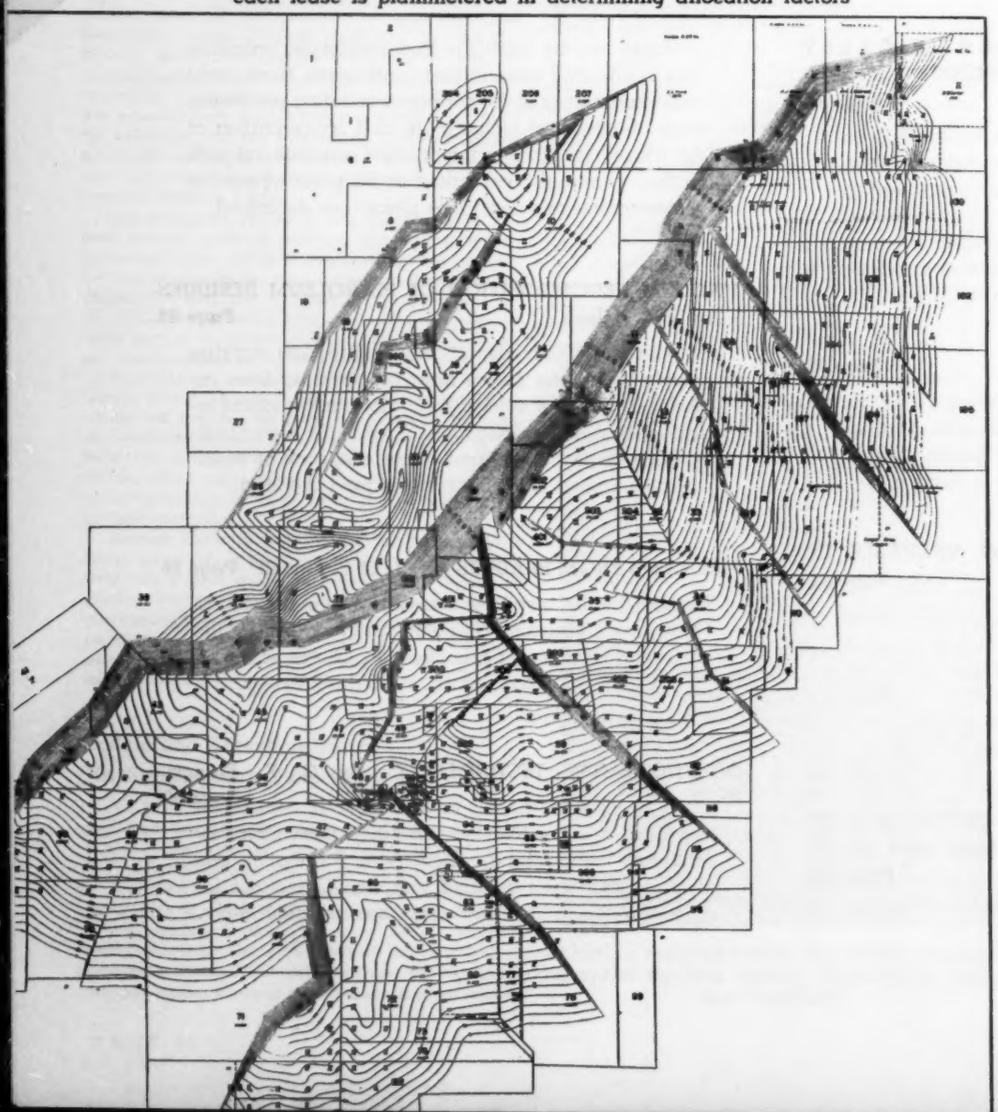
By MITCHELL TUCKER

The Van oil field of Van Zandt County, eastern Texas, is outstanding among the fields of the world in its development and operation under unit control, particularly with respect to recovery, pressure maintenance, and low development and operating costs.

Following intensive seismic and core drill exploration, the discovery well at Van was drilled and completed by Pure Oil Co. on October 14, 1929, in the upper part of the Woodbine sand, total depth 2,710 feet. The unitization, on an adjustment form of contract, was completed among five leaseholders on November 1, 1929, covering what was then considered to include all probable productive acreage, totaling 5,800 acres. Development of the pool by Pure as operator for the Van joint account followed in a systematic and scientific manner thereafter. In June, 1930, oil was discovered outside the unit block by Humble Oil & Refining Co., proving a large block of nonunitized acreage, the majority of which was owned by the Pure, Humble, Shell and Texas companies. No effort was made to bring this acreage into the unit block, so it has been developed and operated under entirely separate managements of the various companies as the Carroll district at Van, while the unitized block continued its operation as the Van joint account by Pure.

Later, shallow production was opened from the Nacatoch sand at about 1,100 feet in what is known as the Brannon district on the northern flank of the field. As of September 1, 1937, a total of 672 wells have been drilled throughout an area of 4,521 acres. Of this number, 559 were oil wells in the Woodbine sand, and three were gas wells (which were shut in and never produced). In this same horizon 70 dry holes have been drilled, 25 by the Van joint account in establishing the productive area and 45 outside of the unit block. In the Nacatoch sand 44 wells have been drilled, 10 of which were dry. Accumulated production now closely approaches 110,000,000 bbls. A remarkable control of water encroachment and pressure maintenance has accompanied this withdrawal in the thick sand sections of the pool, in addition to realizing all the operating economies incident to unit control of oil fields.

Fig. 1—Sand-thickness contour map of the Woodbine sand in the Van pool, showing position of various radial faults in a south and southeastern direction from the main feature. This is a late map published by the Texas Railroad Commission, from which acre feet of each lease is planimetered in determining allocation factors



Adjustment Form of Unit Contract

One of the most serious obstacles to the extension of the practice of unit development of oil pools has been the difficulty of effecting a unit agreement between all leaseholders at a stage early enough in the field's development to achieve all the benefits to be realized from that plan of operation. The Van field was successfully unitized about 30 days after its discovery under the adjustment form of unit contract. Such a clause in the unit agreement has proved to be both equitable and practical at Van.

In the true sense of the word, Van is only half unitized, because the owners of mineral rights are not a party to the unitary agreement. For that reason, the field has been developed and operated in such a manner as to permit equitable withdrawals between individual tracts. The injection of the pressure factor in the present allocation schedule tends to equalize withdrawals with respect to reserves, or oil in place.

The decision to include the original 5,800 acres in the unit block was based upon an early structural map prepared from information obtained by drilling eight core holes to the Nacatoch sand at widely separated points in the field. The Van pool unit contract contained provisions for the subsequent adjustment of values, interests, and shares of income and expense. Two and one-half year periods were fixed, at the expiration of which reevaluation of the constituent leases were to be made by engineers selected from the organizations of the interested companies. Adjustment of interests owned by the participating companies was then made retroactive to the date of the unit agreement.

The adjustment clause provided that the percentages set out at the start should be . . . "tentative only and that the interests of the parties hereto in the join acreage . . . in which the parties will share in the products and proceeds from and contribute to the exploration, developing and operating expenses on said joint acreage shall be tentatively adjusted at the expiration of two and one-half years from November 1, 1929, by a reevaluation of the several oil and gas leases owned by each party, and included within the unit block, based upon the ultimate productivity of such leases arrived at by a consideration of all evidence thereon then available. At the end of the first two and one-half years such adjusted interest of each party shall be the ratio of the ultimate productivity of the leases owned within said area by such party on October

Scientifically Production

20, 1929, to the ultimate productivity of all such leases owned on said date within said area by all parties hereto." A final reevaluation and adjustment of interest was provided at the conclusion of five years of operation likewise retroactive to the beginning of the field.

The productive limits of the dome became fairly well defined before the first two and one-half year adjustment period, thus simplifying the first adjustment of interests. Likewise, very little adjustment was required for the final division of interests, due to the fact that the productivity of the individual tracts contributed by the participating companies was well established.

Percentage participations of the five companies in the Van joint account originally, and after each two and one-half year adjustment, were as follows:

	Original 11-1-29	First adjustment 5-1-32	Final adjustment
Pure Oil Co.	81 70	77 06	76 73
Humble Oil & Ref. Co.	7 75	66	55
Texas Co.	4 51	8 54	8 36
Sun Oil Co.	3 57	5 58	5 18
Shell Pet. Corp.	2 47	8 16	9 18

The full reproduction of the adjustment form of unit development contract may be read, beginning on page 107 of the Mid-Continent Oil and Gas Association's "Handbook on Unitization of Oil Pools," 1930.

Sullivan pneumatic head operating on high-pressure residue gas returned to the well from gasoline plant in the Van field

Briefly, the Van dome or uplift is an anticlinal fold, elongated in the northeast-southwest direction along the main fault feature, from which radial or adjustment faults have been developed in a southeastern direction along the southern and eastern flanks of the field. Production is also found on the northwestern flank of the original dome, along a separate fold parallel to the main northeast - southwest feature. Figure 1, a sand thickness map of the Woodbine sand, shows these various fault positions, and delineates the productive limits of the field.

The oil-bearing portion of the Woodbine on top of the Van dome has a maximum thickness of about 640 feet thinning down to feather edge at the minus 2,500-foot plane, considered to be the uniform water table for the entire field. The Woodbine at Van is separated into two more or less arbitrary divisions, the upper or bentonitic section, and the lower or brown sand section. The brown sand is by far the most permeable and saturated section, and represents the greatest reserve at Van. It is in this section, also, that pressure maintenance has been so well sustained. Figure 2, an electrical survey of a typical Woodbine section at Van, clearly shows the marked difference between the bentonitic and brown sand zones.

For a complete study of Van geology, and the relation this uplift bears to the East Texas embayment, the reader is referred to the University of Texas Bulletin No. 3601, "The Van Oil Field," by Ralph Alexander Liddle, 1936.

Manner of Allocation

Van is one of the few important fields which has been developed under a proper proration plan from the start. In all probability, had the pool not been under unit control, great wastage of reservoir energy and water encroachment would have been encouraged by customary practices during the first few years of its life, when state control was not so efficient as it is today. Withdrawals from the reservoir, however, have been scientifically regulated by the Railroad Commission, state conservation body and the Pure Oil Co. as operators for the Van joint account, from the beginning.

First proration was voluntarily imposed by the unit operators on a per well basis. Soon thereafter the productive area of the field was divided into units of 20 acres each. The potential production of the field and of each unit was determined from potential tests of three hours each through eleven-sixteenths inch choke, discarding the first hour gauge, and averaging the last two. Open flow tests through casing or tubing have never been permitted at Van. The daily allowable for each unit was determined by multiplying the daily average potential by the ratio between the total daily average potential of the units and the allowed daily production of the field. Adjustments were made to maintain the production from offsetting wells uniform, and each well was allowed a minimum of 100 bbls. per day. This proration plan was changed slightly on March 20, 1931, by increasing the size of units from 20 to 40 acres each.

A new order was issued by the Texas Railroad Commission on October 19, 1931, changing the proration plan entirely so as to more nearly meet the needs of the Van pool. This new order, endorsed by production engineers of all the interested companies provided that the daily production of the field be limited to 50,000 bbls. of oil, same to be prorated among the leases equal to the proportion of productive acre feet of Woodbine that each lease bore to the total productive acre feet of the entire pool. Small adjustments were made to care for minimum wells of 25 bbls. daily, and in cases of the inability of the well or leases to make the allowable which had been alloted them.

On March 1, 1935, after the accuracy of bottom-hole pressure instruments became established, the Texas Railroad Commission engineers decided that

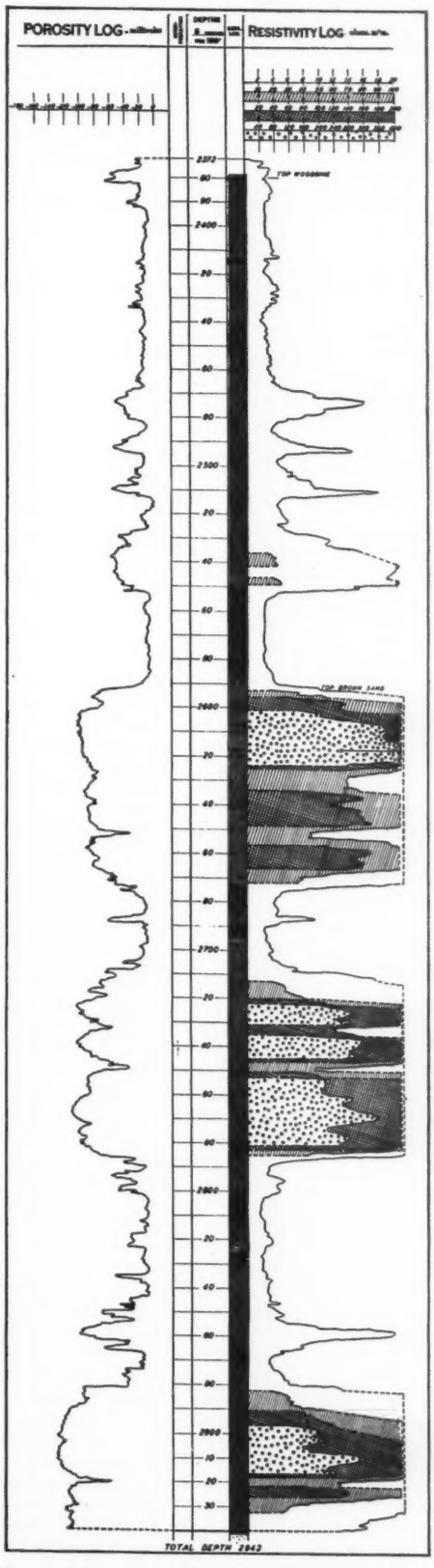


Fig. 2—Electrical log of a typical Woodbine section at Van, showing in particular the marked difference between the bentonitic (from 2,372 to 2,485 feet) and the brown sand zone (2,485 feet to 2,943 feet, total depth)

a pressure factor should be included in the allocation of Van production, and key wells were designated for periodical surveys. The observed bottom-hole pressures of the various tracts were given a 50 per cent weight in the proration formula. This practice continued for about eight months, when it was decided to extend the pressure factor so that it would have an equal weight in the formula with the acre-foot factor. The acre-foot pressure formula has been applied successfully in the field since that time.

At no time have the Van wells been subjected to open flow tests or abusive practices. The acre-foot factor has proved to be a much more representative and equitable means of allocating production between wells than any potential method could have been, particularly throughout a field of such widely varying sand thicknesses. It controlled withdrawals in a systematic manner, it eliminated unnecessary wells in the thin sand sections of the field, and it increased the drainage area. Also, it is a close approach to the so-called "new conception" or "oil in place" theory of ownership.

Determining Potentials

Experiments have been conducted at Van on potential flow through restricted chokes at wells which penetrated varying amounts of producing section. It was conclusively established that a well of, say, 600 feet of Woodbine thickness would produce through tubing but very little more oil on potential test than a well of, say, one-third the section, or 200 feet despite the obvious difference in reserves. In other words, under the proration formulas using the potential factor, original holders of properties under which three times more oil is in place than on other properties of same surface extent, would receive practically no more in the form of daily allowable under such a proration method. Van has presented and established the acre-foot factor in proration formulas as a practical and effective means of correcting for this inequity.

The experience gained at Van has also provided a practical means of making accurate acre-foot determinations. First, in arriving at the surface area for calculations of acre-feet, detailed surveys have been made rather than accept the deeded acreage, as shown for the respective tracts. In arriving at the sand thickness, the total Woodbine section down to minus 2,500 feet (point of fairly uniform original water table) is used, although most wells are now bottomed at minus 2,450 feet. Total section, rather than net saturated section, is included because of the marked uniformity between the shales and sands throughout. Having arrived at the total thickness of section for each well to the minus 2,500-foot plane, a sand thickness map is drawn on top of the Woodbine (as shown in Figure 1). Each lease or tract is planimetered to give the volume of Woodbine present under each tract above the established water level. The sum obtained for each in terms of feet is then multiplied by the surface acreage determined by surveys to obtain the acre-feet in each tract. The summation of all acre-feet in the field is used in allocating the correct proportion of the state's daily allowable to that factor, to be later divided between the respective properties in proportion to their acre-feet and pressure.

Over 300 key wells are used by the state's engineers in making bottom-hole pressure surveys. This large number is considered advisable because of the several adjustment faults present along the southeastern flank of the field, which have a marked influence on the permeable character of the sand, and consequently the pressure. Also, when a pressure factor enters into the allocation of allowed production, it is desirable to use as many key wells as practical. In order to arrive at the average bottom-hole pressure factor to apply to each lease under which pressures may vary, a bottom-hole pressure map is contoured and planimetered in the same manner as the sand thickness map. Figure 3 is a representative pressure contour map at Van, showing the wide variation in pressures in the bentonitic wells in the faulted area to the southeast, and the marked uniformity of the brown sand wells constituting the largest percentage of acreage.

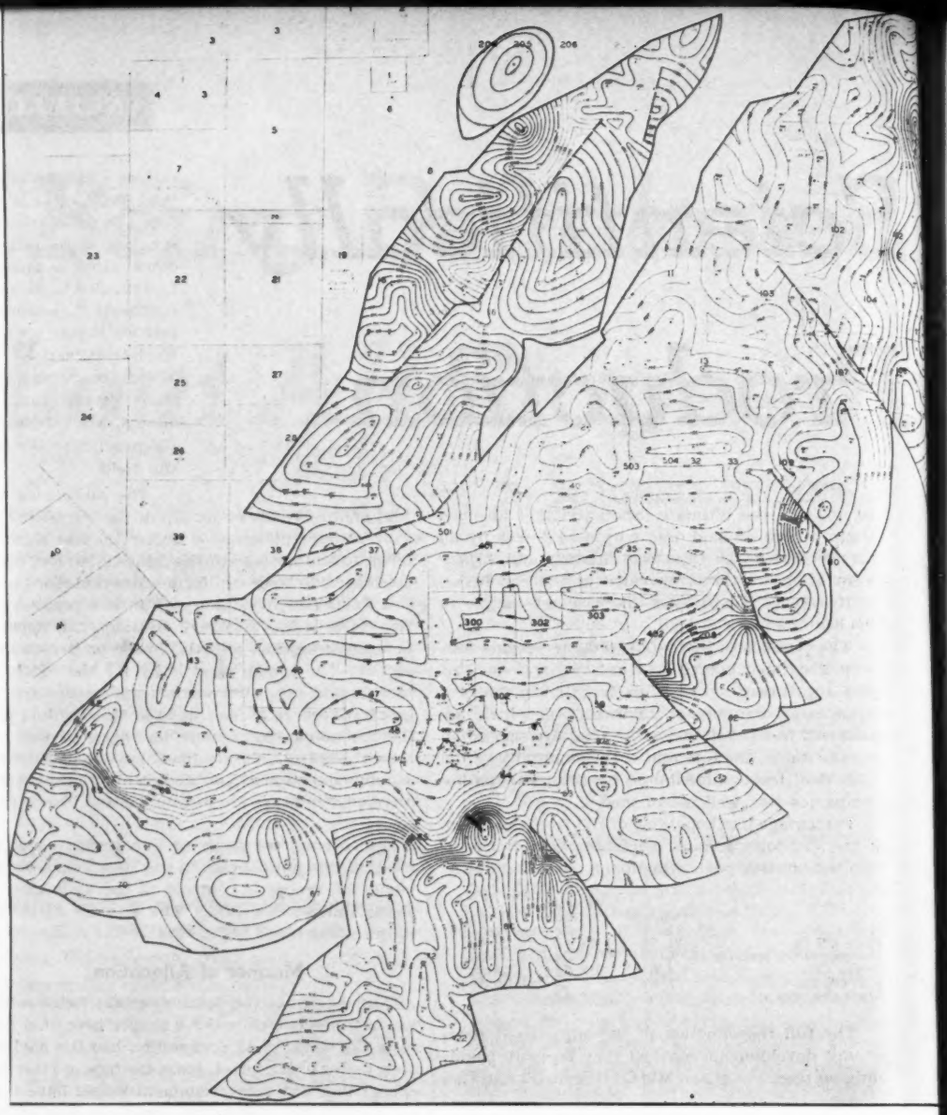


Fig. 3—A late pressure contour map of the Van field, showing the wide variation in pressures in the bentonitic wells in the faulted area to the southeast, and the marked uniformity of the brown sand wells nearer the top of the dome

In determining the daily allowable each month for each tract, the total productive acre-feet is multiplied by the weighted static bottom-hole pressure, and the summation of those factors is divided into the daily state allowable to arrive at the correction factor to apply to each tract so that the allowables of all tracts will total the state's daily grant. Adjustments are then made for minimum well allowables of 20 bbls. daily.

Having once arrived at the final daily lease allowables, the Texas Railway Commission engineers reapportion the lease allowables to the individual wells upon each lease, paying particular attention to see that as uniform a withdrawal as possible is obtained between offsetting wells on different leases.

The remarkable manner in which the reservoir pressure has been sustained throughout the brown sand portion of the pool, accompanied by a withdrawal of about 110,000,000 bbls. of oil, firmly establishes the effectiveness of the acre foot-pressure plan of allocating production.

Daily allowed oil production from the Van field has been drastically cut over the past year or two from a maximum of 52,000 bbls. to the October, 1937, allowable of 24,496 bbls., the lowest point in seven years. Engineers have conclusively shown that withdrawals up to 75,000 bbls. daily can be made without harm to the reservoir, but the cuts in daily production have been made in order that production can be reallocated to newly developed fields in the state.

Pressure Maintenance

Due to the widely varying characteristics of the bentonitic and brown sand portions of the Woodbine section, wells in each must be considered separately in considering reservoir pressure decline.

As seen from the pressure-decline curve, Figure 4, the average bottom-hole pressure in the brown sand wells has declined from an estimated initial of 1,225 pounds to its present average of about 1,137 pounds during the eight-year life of the field, or slightly less than 90 pounds. A major portion of the accumulated production to date has come from the brown sand wells, and although the actual recovery figure from that zone is not available, an extremely high recovery per pound drop in pressure is known to have been obtained.

Wells completed in the bentonitic or upper portion of the Woodbine sand have exhibited an irregular and more rapid decline. Bottom-hole pressures in a water drive field such as Van, depends largely upon the penetration of water into the reservoir as withdrawals are made. Permeability in the bentonitic part of the section being considerably less than in the brown sand section, pressures have been erratic in their decline but in relation to the permeable nature and thickness of the bentonitic. As would be expected, practically all of the

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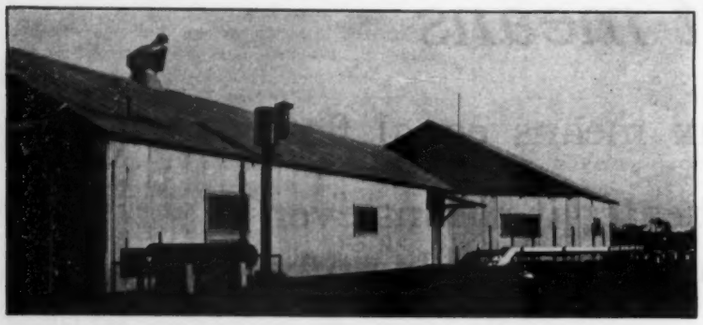
pumping wells at Van are bottomed in this upper portion of the Woodbine along the flanks, approaching the minus 2,500-foot water table.

Due to the very well sustained pressures of the brown sand wells, any estimate of their probable flowing life is highly problematical. An extrapolation of their present decline points to a continued flowing period far into the future. This is confirmed by the relatively large number of acre-feet of oil sand from which each well is producing.

It is inconceivable that such pressure maintenance would have been achieved had the pool been developed under ordinary methods during its early life when scientific proration was not invoked by the state. Here again is established the wisdom of unit control from the beginning.



Power house in the bentonitic portion of the field

Gas-Oil Ratios

No free gas has appeared at Van except in a few gas wells drilled during its early life in the unit block and all of these were west of the main fault. These gas wells were capped and have never been produced except for periodic testing. The average gas-oil ratio is 325 cubic feet of gas per barrel of oil, being practically the same as at the time the field was discovered. Flow through restricted chokes at uniform rates throughout the reservoir has had an important part in keeping the formation gas in solution with the oil as lifting energy.

In view of the extremely thick section of saturated Woodbine, well spacing should be considered at Van in terms of acre-feet instead of a straight acreage basis; in other words, well spacing should be considered in terms of the actual oil in place under each well. From a straight acreage standpoint, the present pattern over the producing area is about one well to each 8 acres at Van. In comparison, the East Texas field is now developed to an average pattern of one well to less than 6 acres.

Making the same comparison in terms of acre-feet, the total acre-feet of Woodbine in the Van pool is 1,166,625, or an average of 2,096 acre-feet for each of the 566 Woodbine producers. In comparison, there are about 6,900,000 acre-feet in the East Texas field reservoir (138,000 productive acres times an average thickness of 50 feet), or an average of 293 acre-feet for each of the 23,500 producing wells. Applying the same comparison to other fault line fields in the Woodbine in eastern Texas, the average acre-feet per well at Powell is 316, and in Mexia it is 713 acre-feet per well.

Had Van not been developed largely under unit control, perhaps three times as many or more wells would have been drilled to this relatively shallow but prolific pay. However, the high recovery per acre-foot which has been obtained to date, and the vast remaining recoverable reserves known to exist, offer proof that the present spacing is not too great.

Another record was established at Van when only 25 dry holes were necessary to define the limits of the original 5,800-acre unit block, under which many radial and parallel faults were found.

Average recovery per well to date at Van totals, in round numbers, 200,000 bbls. It has been estimated that ultimate recovery per well will average four times that amount, or 800,000 bbls. At no other field in the world have wells consistently been so satisfactorily produced as at Van. Of course, the remarkable sand thickness factor is accountable for this in a large measure, but unitized operation, with controlled well spacing may be accorded due credit for this recovery.

Considering recovery per acre-foot, the yield of 110,000,000 bbls. from 1,166,625 acre-feet (55 per cent of which is oil bearing) indicates a recovery to date of 171 bbls. per net acre-foot of sand. In comparison, the East Texas field has averaged 292 bbls. per acre-foot of net sand to date, which gives some idea of the relative degree of depletion due to higher allowables granted the East Texas field.

The consolidation of development and operating efforts has resulted in probably the greatest monetary saving to participants in the Van joint account. A minimum number of major equipment items are required; jointly owned powers can pump wells in all directions regardless of original ownership; well servicing crews can work over the entire block; savings in operating one warehouse, making quantity purchases, will be substantial; one fleet of lease trucks can be operated over unit maintained roads with a minimum of shutdown time; one gas gathering system, one natural gasoline plant, one gas residue system, one fresh water system, one salt water disposal system, and central camps, have all resulted in substantial operating economies to the participants.

Savings in overhead costs for adequate supervision in the field is another important item resulting from unit control. The properties are handled by one superintendent, one assistant superintendent and three field foremen. A superintendent is also employed for the gasoline plant and by the salt water disposal company. Two camps have been built in the block, one at the central office site and the other at the gasoline plant. The three field foremen have company-owned dwellings and toolhouse bases at centrally located points in their respective districts.

Drilling

Early wells at Van were contracted, but they are now drilled with rotary tools owned and operated by the Van joint account. The savings thus effected would not have been available to the smaller lease holders had they not been participants in the unit. Of course, all wells on tracts outside the unit in the Carroll district are drilled by the respective lessees. Originally from three to four weeks were required to drill and complete a Van producer; they are now drilled in an overall time of 10 to 14 days.

All wells have been cored and logged carefully, with a field geologist supervising the sampling of each well. About one out of every four wells has been cored continuously through the Woodbine section. Others have cored only for the top of the Woodbine, and electrically surveyed after reaching total depth. The determination of the Woodbine top is very important as it enters into the calculation of acre-feet under each tract, and in subsequent daily allowables.

Surface casing is set at about 300 feet, below the soft loose sands near the surface, and cemented to the top. During the first few years of development, the 7-inch O.D. production string was cemented at the top of the Woodbine, and $5\frac{3}{16}$-inch perforated liners set to bottom. All new Van completions are now selectively completed by drilling through the entire section to the minus 2,450-foot depth, electrically logging the hole, and then setting the 7-inch production string on bottom and cementing with 400 sacks. With the electrical log as a guide, the gun perforator is used to open the desirable lower zone or zones of saturation to production. During later life, when the water table rises, such wells can be plugged back and reperforated opposite higher saturated zones, as indicated on the electrical log.

The completion practice has been to clean all new wells in a large portable separator, and then switch them into the flow tanks, thus avoiding the usual hazards and unsightliness of this operation. Upon completion, all pits are filled and refuse removed, leaving the surface perfectly smooth and clean. This same practice is followed in all other forms of field operation, and the extreme cleanliness of all Van leases is particularly noticeable.

Gas separators are used at all lease tank batteries, through which casinghead gas is separated from the oil and run by the Van joint account gathering system to the unit-owned gasoline plant in the field. Gas from properties in the Carroll district is sold to the unit gasoline plant on a contract basis. The gasoline plant is of the compression-absorption type, handling about 15,000,000 feet of wet gas daily, varying with the field oil allowable, and producing about 35,000 gallons of natural gasoline, representing a yield of slightly over 2 gallons per 1,000 cubic feet.

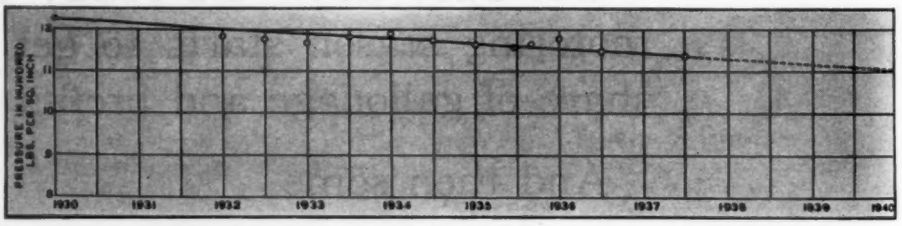


Fig. 4—Pressure-decline curve of the brown sand wells at Van, showing only a drop of less than 90 pounds during its eight years of flowing life

The compressor portion of this plant consists of 21 units, although all of them are not operated following cuts in daily field allowable. Gas is pulled into the gasoline plant at about five points vacuum (atmosphere on the traps) and discharged at about 260 pounds to the high-pressure absorber and stabilizer. After sufficient gas has been delivered to the residue system for lease and domestic purposes, the remainder, totaling about 9,000,000 feet daily, is sold to United Gas Public Service Co. for transmission through their 10-inch line from the field to their main line at Mineola, Tex. Malodorant is added to all residue gas for field consumption as it is metered out of the plant.

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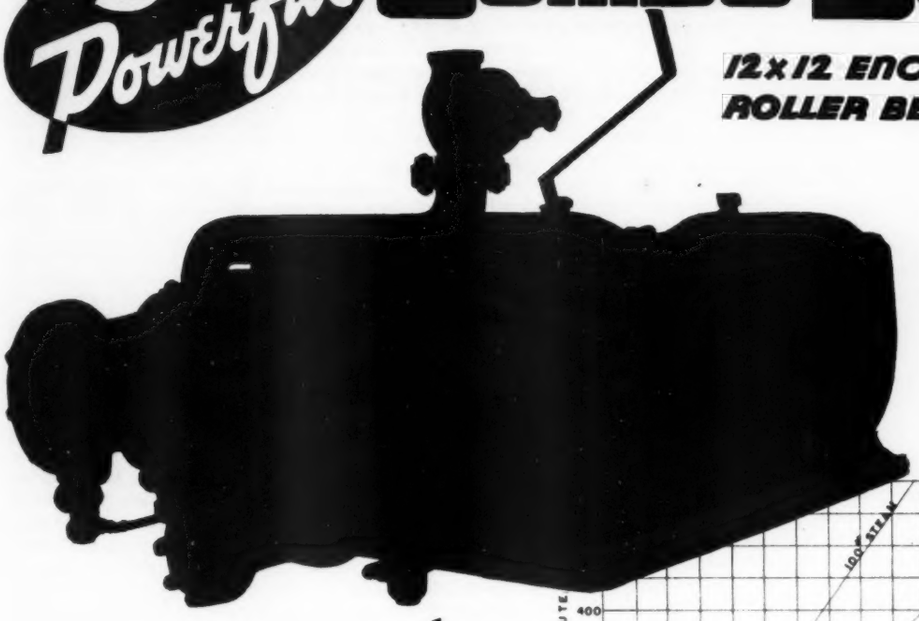

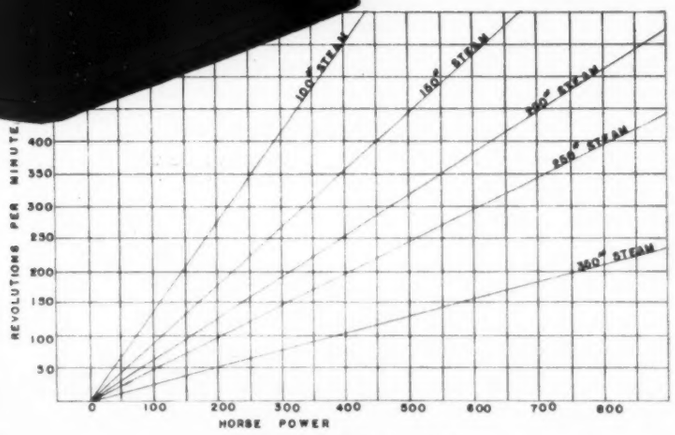

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ing in the unit block, 141 of which are in the Woodbine sand and 8 in the shallow Nacatoch sand. Practically all the Woodbine pumpers are situated along the flanks in the low-pressure areas where only the bentonitic portion of the Woodbine section above the water table is penetrated. Permeability has been found to increase with depth on the Van dome, and in those flank wells where only the upper portion of the Woodbine is above the water level, the producing section is not permeable enough to obtain full benefit from the active water drive, thus necessitating that they be pumped. Certain few wells located in or near the faulted areas produce water, and require pumping.

Wells in the bentonitic area are adaptable to central power pumping, because of the low fluid volumes to be handled, and because of their shallow depth. The relative impermeable nature of this section provides justification for not expecting large water volumes during later life. At present there are nine modern bandwheel powers installed in the field, all 30-inch face by 30-foot bandwheels, endless belt driven through floating type idlers by 160-hp. gas engines. Daily allowables can be obtained in six hours or less from most of these wells, and by intermittent pumping as many as 35 or more wells can be pumped from one power.

The brown sand wells, having a much higher permeability, may logically expect large water volumes when the water table rises to the base of the well bore. Three wells are now pumping quantities of fluid suitable for operation of Sullivan pneumatic heads. Two of these units receive their high-pressure injection medium in the form of residue gas from the gasoline plant, which is heated on the lease before introduction into the pump head. At the other large volume pumping well, an air compressor is installed at the well, heating the compressed air by its own exhaust before delivery to the well.

Seven switchers are employed in the unit block for each tour. That portion of the field is divided into seven districts of about 50 wells each. Company cars are provided for the men on duty in each of the seven tour crews so they may visit all flowing wells and tank batteries as many times as necessary during each shift. Good oiled roads have been built and maintained by the Van joint account throughout the block. Pumpers, of course, handle all jack wells served by the central powers.

Water Encroachment and Control

Water was first encountered along the east edge of the field while delineating the productive limits. Bottom-hole water appeared in a few wells which were drilled to establish the original water table in the Woodbine, but these have all now been plugged back above this critical level. Due to the low permeability in the bentonitic wells along the flank, only a relatively small amount of water can penetrate into the well bore daily; in fact, present water volumes in such wells vary from location to location, depending upon the permeability of the surrounding area. Serious encroachment of water is never expected in these wells.

Controlled withdrawals from the highly permeable brown sand wells, and their uniform completion 50 feet or more above the original water table, has minimized the appearance of water in this portion of the field. Only in unusual cases, where perhaps a well is bottomed in or near one of the radial faults, has water been a problem at Van.

Present salt water production at Van is about 7,500 bbls. daily from both the unit block and the Carroll district. The Van Salt Water Disposal Co. was organized in 1933 and has since that time gathered and disposed of the water from all properties.

Salt water is first drawn from tank batteries in 4-inch tile pipes. Because it is likely that some b.s. or oil may come off with the water, four settling points are allowed before final disposition is made of the fluid. From the tank battery, water is run to a 6 by 6-foot square creosoted settling box nearby, from which the salt water is drawn off the bottom and any oil or b.s. skimmed from the top. It then gravitates through tile pipe to one of eight intermediate 20,000-bbl. clay-lined salt water pits situated on the eight water sheds on all sides of the field. At each of these intermediate pits water is first run into a 250-bbl. cedar tank, from which salt water is drawn off the bottom and any remaining oil or b.s. skimmed off the top. During certain seasons a good deal of the water is evaporated out of these 20,000-bbl. intermediate pits. Water is then pumped out of the bottom of these pits (thus permitting another separation from the b.s. or oil) and pumped by gas engine operated centrifugal booster stations to the Nation's salt water reservoir of 2,000,000-bbl. capacity, situated about 7 miles north of the field, and about 15 miles from the Sabine River. The fluid is passed through a final settling basin at this reservoir, and given additional opportunity to evaporate under favorable conditions. The Van Salt Water Disposal Co. is now considering the practicability of disposing of this water by injecting it into salt-water bearing sands.

Unit operation at Van provides an additional saving in requiring only one water system for the entire field. During winter months all operating and domestic water requirements are supplied from springs feeding the headwaters of the Neches River about 3 miles southwest of the field. An earthen dam impounds sufficient quantities of water for winter use. This source of supply is not adequate during the dry season, and three large-diameter 800-foot gravel-packed water wells have been completed southeast of the field, from which as much as 25,000 bbls. each daily can be pumped by the submerged electrically driven centrifugal pumps. After being lifted to the surface, water is pumped by additional electrical centrifugal pumps to a 55,000-bbl. tank situated at a high point in the field, from which a network of gravity lines supply the field requirements.

Pure Transportation Co. gathers the oil in the unit block, and from some of the independently owned properties in the Carroll district. It is delivered through intermediate field pump stations to their tank farm and 1,200-hp. electrical main line pump station about 6 miles west of the field, from which oil is dispatched through their 10-inch trunk line to the Pure Oil Co.'s refinery at Smiths Bluff on the Gulf Coast.

By terms of the unit contract, each participating company may take their ratable share of the daily production. Humble Pipe Line Co. has a 10-inch line running east out of the field, through East Texas and thence to their affiliated Baton Rouge, La., refinery. They are taking their proportion from the Van joint account and from their independently held properties in the Carroll district.

The Texas Short Line Railroad was completed into the field in 1931, connecting to the Texas & Pacific Railroad at Grand Saline. All gasoline manufactured at the natural gasoline plant is shipped from the field in tankcars.

Additional operating savings are effected by having one central warehouse for all the Joint Account properties. Here time-saving machinery is justified when used on a large scale that would not be economically advisable in smaller operations. A complete machine shop, garage, welding shop, pipe yard, railway siding, mechanical hoist, and permanent buildings for small supplies are included. One warehouse crew handles requirements throughout the unit block, resulting in substantial savings over that which would be required if each of the participating companies were operating independently in the field.

Oil to Gasoline Consumption Ratio Estimated From Results of Survey

The results of a survey recently undertaken by the American Petroleum Institute to determine as nearly as possible from the small amount of information available, the ratio of gasoline to oil consumption in motor vehicles during 1936 is shown in the accompanying table. Questionnaires were mailed to, and received from operators of fleets of motor vehicles in every section of the country. The survey may be said, therefore, to reflect geographically average conditions as well as an average ratio of oil consumed. However, it cannot be said to reflect the "average per vehicle consumption." This average, according to estimates, is about 715 gallons of gasoline per year, while the average per vehicle reported to the survey is 1,219 gallons, indicating that the vehicles, covered by the survey were in more constant use during the year than the general average.

In the majority of cases, according to the report, contributors to the survey were unable to segregate the consumption of transmission and differential oils from oil used in crankcases. It was, therefore, deemed advisable to include all reported transmission and differential oils with crankcase oil in calculating this ratio. "However, reports received from operators who did show crankcase oil separately and whose total consumption of gasoline was 89,214,097 gallons, showed a ratio of 50.70 gallons of gasoline consumed to 1 gallon of oil used in the crankcase. This ratio embraces all classes of vehicles. For passenger cars the ratio was 42.83 gallons; for trucks it was 47.72 gallons, and for buses, 61.82 gallons of gasoline to 1 of oil. It was further indicated, in reports from consumers of 45,842,587 gallons of gasoline, that transmission and differential oils were consumed in the ratio of 1 gallon to every 282 gallons of gasoline.

"Information on the consumption of chassis greases was reported by operators having a total consumption of 52,030,430 gallons of gasoline. They indicated the consumption of grease in the ratio of 1.12 pounds per 100 gallons of gasoline consumed."

Classification:	Number of vehicles covered by reports	Per cent of average number of vehicles in use	Total gasoline consumed (gallons)	Oil consumed in crankcase, transmission and differential (gallons)	Ratio: Gasoline to oil (gallons)	Ratio: Oil to gasoline (gallons)	Per cent oil to gasoline
1. Passenger cars	20,267	.09%	10,213,201	260,075	39 27-1	.0255-1	2 55%
2. Trucks	14,518	.41%	28,340,099	642,784	44 09-1	.0227-1	2 27%
3. Cars and trucks*	27,169	.....	22,918,783	481,995	47 55-1	.0210-1	2 10%
4. Cars and trucks†	24,584	.....	31,608,945	809,939	39 03-1	.0256-1	2 56%
5. Buses	2,742	2.29%	15,743,093	335,004	57.08-1	.0175-1	1.75%

*50 per cent or more of these vehicles were cars. †50 per cent or more of these vehicles were trucks.

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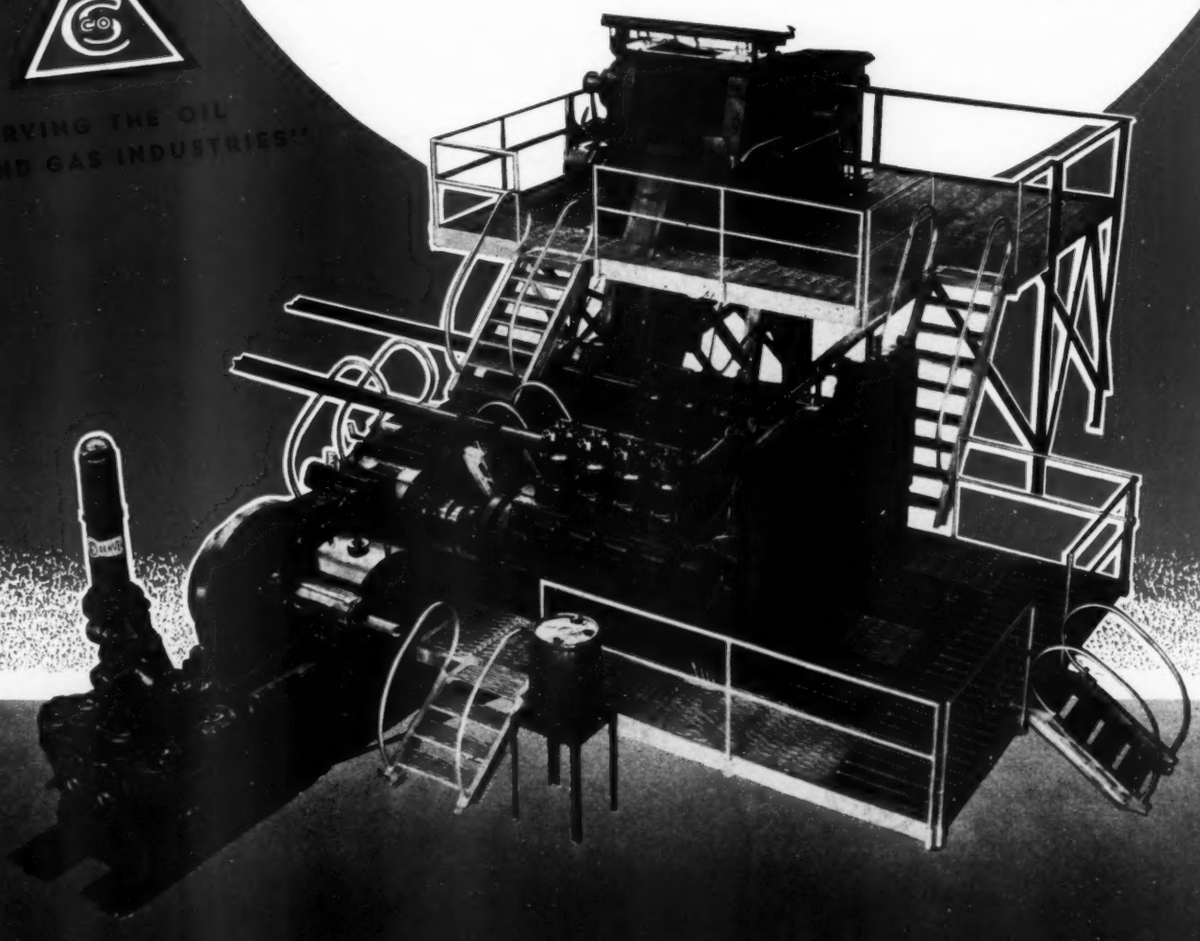

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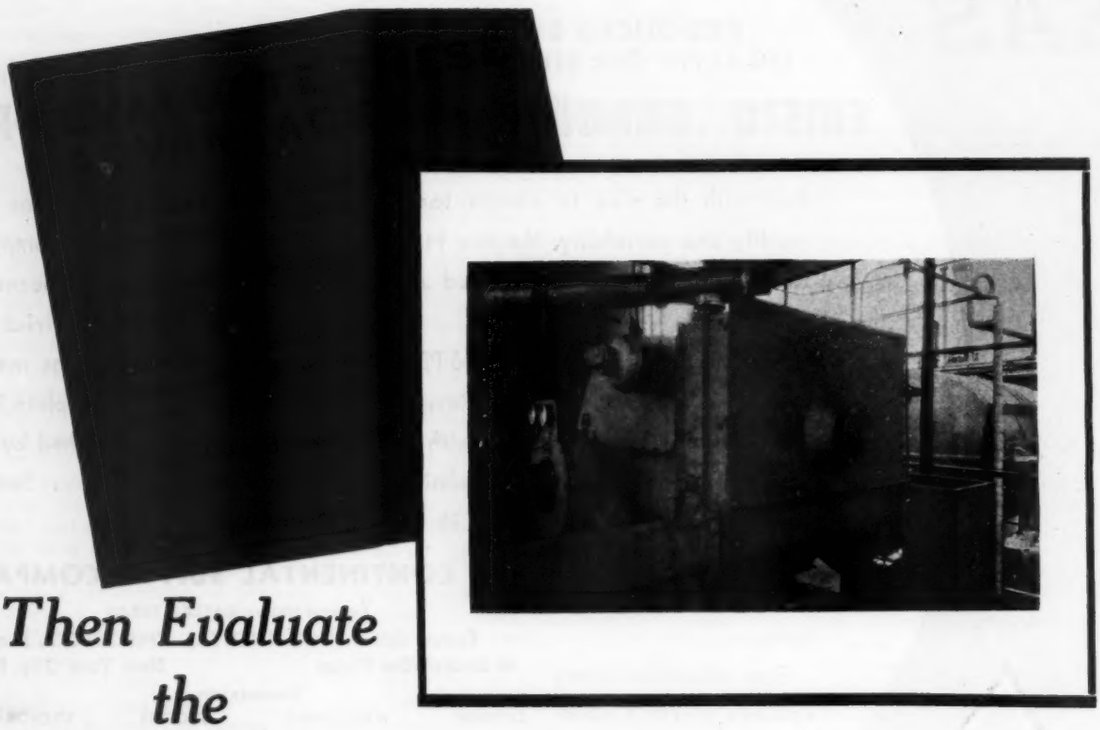

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OPERATING IDEAS

Reservoir for Brake Water

By welding four oil drums together a contractor in a West Texas field has made a reservoir for holding water used in cooling the brake drums of the drawworks. Through use of the reservoir the pressure of the water on the brake drums can be controlled, thus eliminating the chance of their being injured.

Bench for Pipe Line Station

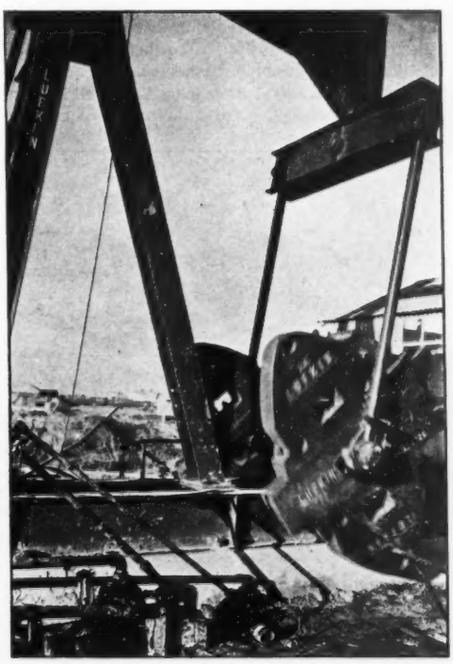
A large pipe line company operating in the Gulf Coast of Louisiana installed a work bench in each station along its line for the operators to mount their vises and emery wheels on. The bench is constructed from a piece of 6-inch casing cemented into the floor with a piece of three-eighths inch steel plate welded onto the top of the casing, thus forming a table top. This makes a very rigid work table requiring but little floor space.

Unloading Fuel Oil at Drilling Rig

A novel hook-up for unloading fuel oil at drilling rigs is being used by one fuel oil contractor. As is shown in the accompanying photograph, a small rotary pump is installed on the rear of the truck and is driven through a driveshaft by a belt running from the pulley to the rear wheel. Therefore, when unloading it is only necessary to jack up one wheel, place the belt in position and begin pumping oil to the storage tank. The pump will empty the tank in about 15 minutes.

Novel Tool Rack Pedestal

A major oil company operating in central Kansas has erected an unusual tool rack in the engine room of one of its gasoline plants. The rack is constructed entirely of wood with the face of the rack holding all tools that are frequently used. On the back are hangers for holding special tools that are used only in overhauling machinery. The platform which supports the rack has a storage space for parts such as gaskets, small valves, etc.



Pump Actuated by Geared Unit

A "one-armed Johnny" type of pump is being operated at a pumping well in the Talco field by means of a 1-inch pipe pitman operating from a clamp placed on one side of the rotary counterbalance of a geared pumping unit. The pump is used to move salt water or crude oil through treating plants or in lease operations, and is disconnected from the clamp on the counterbalance when not in use. This view was taken when the pump was not in operation, thus the pitman is disconnected with one end resting on the ground.

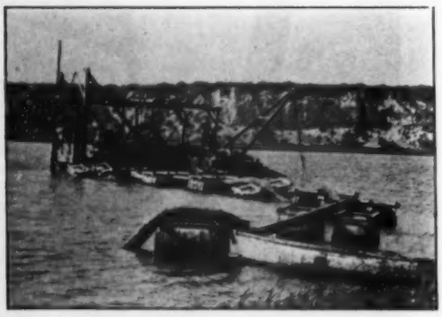
Ground Oyster Shells Proving Valuable in Drilling Muds

By T. P. SANDERS

Oyster shells and calcareous vesicles of other sea urchins were recently put to a new use in the oil industry. The service record of these shelled bits of marine life to the industry is one of long duration. It is probable that these forms contributed most of the organic material to make up our oil pools, and it is certain that their tests have formed the reservoir rocks of many of these pools. But their usefulness did not stop here. Fossils left by these benefactors have been indispensable to the petroleum geologist faced with the problem of correlating strata over wide areas. Their remains have also been necessary to the making of cement, a product vital to the oil industry. Now their use, in pulverized form, as an admixture to drilling fluid adds another link to their enviable record of uninterrupted service.

Effect on Mud

The addition of calcium carbonate makes drilling mud susceptible to attack by hydrochloric acid. This characteristic becomes important in well completion and fishing jobs. As is well known, few considerations in the industry have commanded



Dredge used by Buck and Stoddard, Inc., at Balboa, Calif., for gathering sea shells which are crushed and added to drilling mud

more study in late years than the problem of drilling through an oil-bearing formation without impairing its productivity. Calcareous drilling fluid is one of the remedies which has been advanced to meet this problem. Extensive experimental work on this method was performed by H. C. Miller and G. B. Shea and reported in Bulletin 3249 of the U. S. Bureau of Mines under the title "Chemical Method for Removing Mud Sheaths in Oil Wells." It was pointed out that if enough finely divided limestone were added to the mud, the cake deposited against the productive strata could be removed by acid. Carbon dioxide liberated in the reaction serves to agitate the acid and helps to dislodge the clay and other inert parts of the mud cake. This, under favorable conditions, insures completion of the reaction between acid and the calcium carbonate in the cake. Besides carbon dioxide, the products of reaction are calcium chloride and water. The calcium chloride is readily soluble in water at well temperatures. It was determined that the addition of 20 to 30 pounds of pulverized limestone would normally produce the desired results, and it was shown that fine division is important.

Since publication of the experimental data, well completions with calcareous additions to mud have been quite extensively used, especially in some of the Mid-Continent fields. These practical applications have served to substantiate the experimental results, and in a number of wells a comparison of productivity with the average of the surrounding wells has clearly indicated the benefits derived from the use of this method. Very large acid shots are used, averaging in the neighborhood of 5,000 gallons. Varying quantities of calcium carbonate have been added, but usually 100 pounds is added for each barrel of mud in the system. Within the past few weeks J. E. Brantly, Los Angeles drilling contractor, has drilled several Texas wells using pulverized Austin chalk exclusively to make circulating fluid. The chalk of the Austin formation differs from limestone or ground sea shell in that it has colloidal properties which enable it to hold solid particles in suspension. For this reason it can be mixed with water to form a satisfactory drilling mud, whereas most other natural-occurring carbonates must be added to a mud which already contains colloidal material, such as clay.

When carbonate is used in drilling the entire hole, fishing jobs, such as twist-offs, are more easily dealt with. If circulation can be established around the "fish," the use of acid to break down the consolidated mud will usually free the tools. Even when circulation cannot be established, acid is often useful after the "washing over" process has been carried out.

Preparation of Shells

In California the calcium carbonate most widely used for addition to drilling mud is obtained by crushing unconsolidated sea shells. This material has the advantage of being practically pure calcium carbonate, and upon being crushed it forms flaky or fibrous fragments of relatively thin cross-section. These are more readily attacked by acid than the granular particles which result from crushing a consolidated limestone, and it is believed that particles of this type are more efficient in forming a thin impervious mud sheath over the producing formation while drilling is in progress.

The method by which shells are gathered and processed is an interesting branch of the oil industry. Oil field equipment and methods have been applied to the task, though with radical changes. Sea shells are sometimes found in large deposits. At Balboa a deposit is being developed which extends downward to a depth of 60 feet, and covers many acres in a shallow estuary. A barge specially built for the task is used to dredge the shells and sand with which they are interbedded from the bottom. On the barge are three gasoline engines, two of which are used to drive large reconstructed mud pumps, which furnish the suction necessary to transport the material from the ocean bottom to the washing plant on shore through a 10-inch flexible hose. The third engine serves to drive the bit at the intake end of the hose. The bit loosens the shells so that they may be drawn in by the suction pumps. It is driven by a novel type of flexible shaft made up of short members which are joined together by universal-joint couplings. This shaft revolves inside of the hose. On shore the shells are washed to remove sand and organic material and are passed through a rotary kiln dryer. They are crushed in a ball mill so that 96 per cent will pass through a 100-mesh screen. When this point is reached approximately 22 per cent will pass a 325-mesh screen, since the gradation is great.

Methods of Application

Recent developments have given the operator, who wishes to protect his productive strata against injury from drilling fluid, a choice of several methods. Most of the early work along this line was concerned with the principle of using mud which would not penetrate the interstices of the

Piles of sea shells at plant where they are washed and dried preparatory to crushing

sand, and mechanical methods were developed for removing the coating of mud from the pay. These methods are still in use. Most methods have used the principle of reducing the hydrostatic pressure of the fluid column, either by the use of light weight mud, oil, or oil and gas. These methods, especially pressure drilling, are rapidly gaining popularity, since conclusive proof of their benefits have been obtained in many fields. When several methods are available for accomplishing a desired objective, it is usual to find that some of them offer advantages under special conditions. This is true of the chemical method of well completion. A special condition under which it is used to advantage is found in fields where it is desirable to drill the well to its total depth before setting casing. Using calcareous drilling mud instead of oil to drill the pay, it becomes possible to cement the casing without running the risk of an inferior cementing job being performed because of the presence of oil on the walls of the hole.

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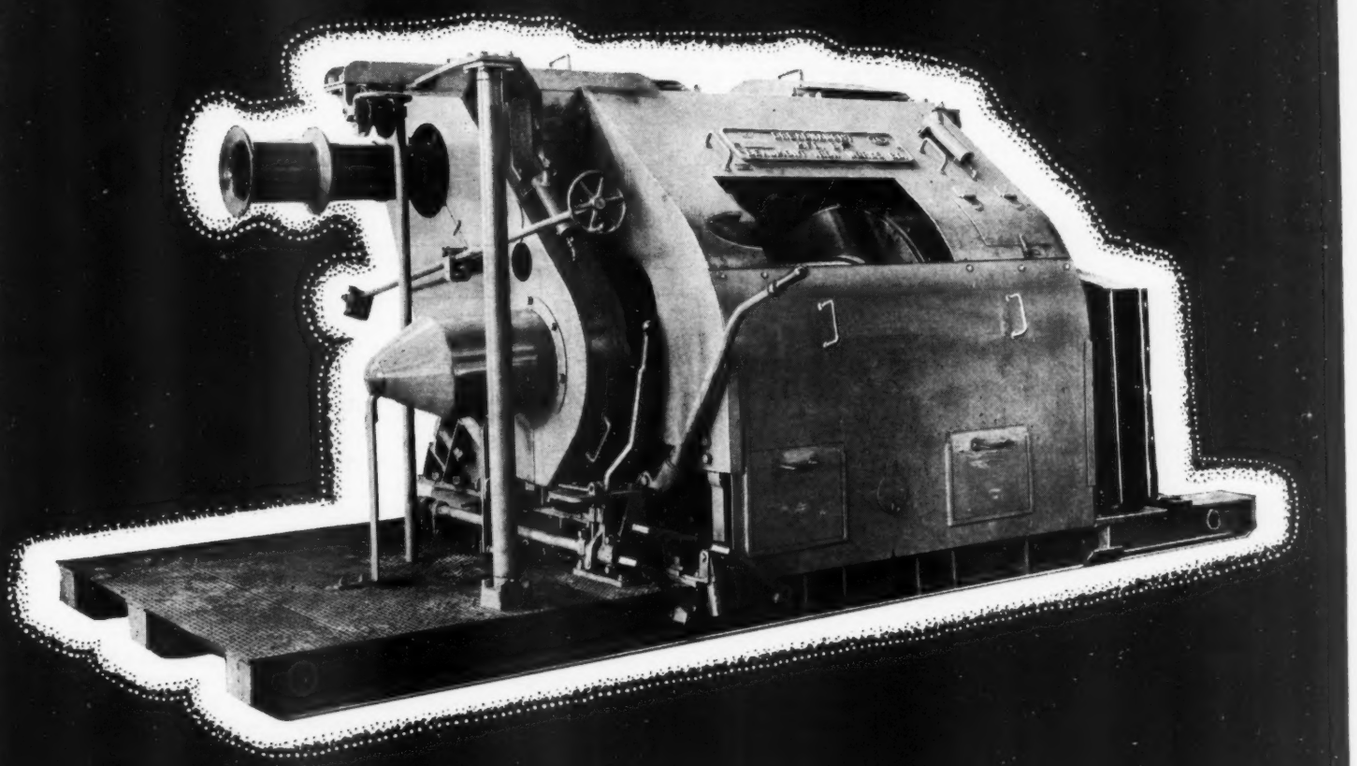

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Control of Copper Sweetening Centralized in Few Variables

By WALTER A. SCHULZE and A. E. BUELL
Phillips Petroleum Co.*

Until a few years ago refiners gave little attention to the sulfur, oxygen and nitrogen impurities in gasoline stocks, except in so far as these impurities directly interfered with the meeting of various state and federal specifications governing the finished products. It has been generally accepted, of course, that hydrogen sulfide and elementary sulfur should be removed from motor fuels because of their corrosive influence on metals. Likewise, it has been the general practice for years to sweeten gasolines in order to improve the odor. The refiners normally accomplished these results through methods which became more or less standardized for the industry over a period of years, giving little or no thought to improving the methods. In fact, no improvement in the existing methods was thought necessary since it was not appreciated that the small amounts of impurities of the sulfur, oxygen and nitrogen types normally encountered in gasolines could exert such powerful influences upon octane number, lead response, color stability, potential corrosion and other properties. But research has demonstrated the deleterious effects of these impurities and today refiners have awakened to the fact that enormous progress is being made in the art of treating gasoline stocks. The results of these improved treating methods have been shown in some instances merely in lowered costs of refining, some in higher quality products without much change in costs, and in a few cases in both improved quality and reduced costs.

Since the sweetening of sour gasolines with copper solutions has been described in previous papers, and since there has been so much commercial development along this line, it is assumed that readers are familiar in a general way with the "so-called" Copper Solution Process and the Solid Copper Reagent Process. In both of these methods the mercaptans are converted to disulfides through the oxidizing influences of cupric copper and soluble chlorides. The treating agents are either concurrently or subsequently regenerated with air. One of the advantages of copper sweetening is the theoretical absence of chemical consumption in the sweetening step. In practice it is necessary only to make up small mechanical losses of the solution, and chemical costs have frequently been reduced.

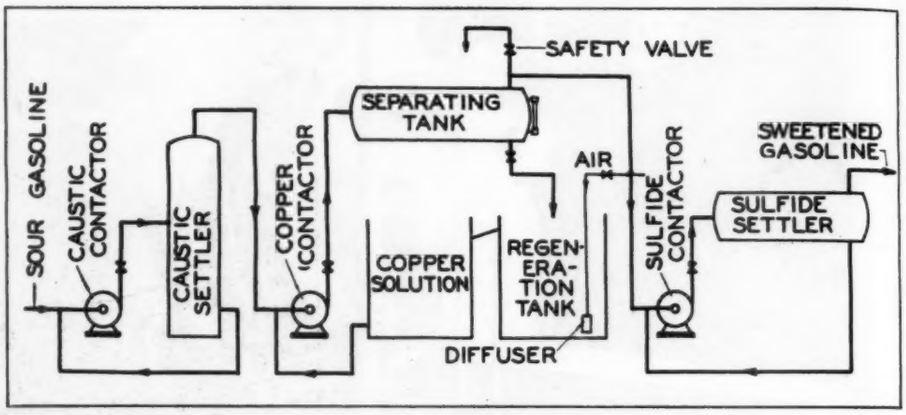

Fig. 1—Flow diagram of copper solution process

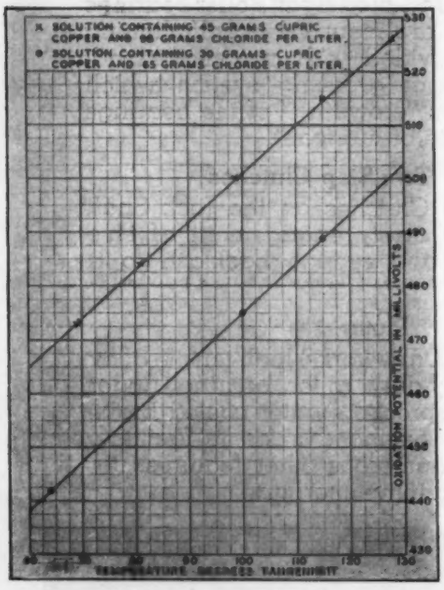

Fig. 2—Effect of temperature on oxidation potential

The processes are applicable to the various stocks requiring sweetening, and are especially suitable for those of a very sour nature since these are handled just as easily as those that are less sour, and at only slightly greater cost due to increased air requirements. As stated before, Perco copper sweetening is applied in two ways—for stocks which are sufficiently stable to color and gum when treated in the presence of air, the hydrocarbon oil is mixed with air and filtered through a bed of adsorbent material impregnated with the copper reagent; other stocks are contacted in the absence of air with the copper solution, and the solution is regenerated in a separate tank. The oxidizing power of the solution is controlled by varying the extent of the regeneration, thus minimizing side reactions with unstable hydrocarbon constituents of the stock. To insure color and gum stability, the stocks treated with the copper solution are given a final wash to remove any traces of copper remaining in the treated oil.

Operation of Unit

Figure 1 is a flow diagram for the Copper Solution Process. The stock to be sweetened is first given an alkaline wash to remove all hydrogen sulfide and elementary sulfur. If these are not present, as often is the case, this preliminary washing can be omitted. The stock is then contacted in a centrifugal pump with the copper treating solution. The mixture passes to a separating tank, from which the used solution is continuously withdrawn to the regenerating tank where it is blown with a controlled amount of air to give a solution of the desired oxidizing potential. For maximum efficiency in the regeneration, the air is introduced through porous diffusers near the bottom of the tank. The regenerated solution overflows to a solution storage tank and is then recycled. The gasoline is continuously withdrawn from the top of the separating tank and is given a final wash with the stabilizing solution, settled and run to storage.

As stated above, the oxidizing potential of the treating solution is maintained within controlled limits. In this connection it was found several years ago that the sweetening power or reactivity of copper sweetening solutions could be determined by measuring the relative oxidation potentials of such solutions. Specifically, by oxidation potential here is meant the potential developed between a polished platinum or gold electrode and a saturated calomel half cell when the two are contacted with the copper solution. When the concentration and other characteristics of the treating solutions are so controlled that this oxidation potential is kept within certain limits, superior products result from the sweetening of certain gasolines, and especially cracked gasolines.

Several factors which affect this oxidation potential are: (1) temperature of the solution, (2) concentration of the copper solution, both in total copper and in total halide; and (3) the concentration of cuprous copper in the solution. The effect of temperature on oxidation potential is illustrated in Figure 2. It will be noted that the oxidation potential increases rapidly with temperature and as a result more dilute solutions should be used on hot gasoline streams than on cold gasoline streams.

(Continued on Page 57)

*Read before divisional technical meeting of Western Refiners Association. Author's title "Several Important Factors in Perco Copper Sweetening Processes."

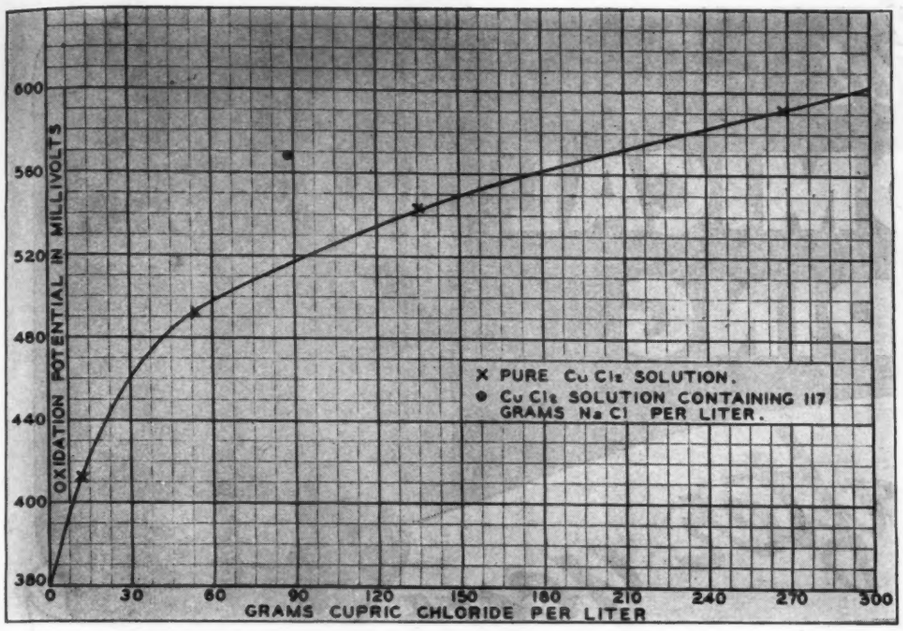

Fig. 3—Rate of increase in oxidation potential

The potential of the solution containing 30 grams cupric copper and 65 grams chloride per liter at 98° F. is equivalent to that of the solution containing 50 per cent more of cupric copper and chloride at 70° F. In Figure 3 is shown the rate of increase in the oxidation potential with increasing concentration of pure cupric chloride in the solution. In addition, the effect of increase in oxidation potential as a result of increase of chloride concentration (from sodium chloride) is illustrated. Figure 4 shows the effect of low concentrations of cuprous copper on the oxidation potentials of the two copper solutions. It may be noted that the effect of addition of cuprous copper is greatest in the solution containing least cuprous copper. This follows directly from the fact that the oxidation potential for any one system is a function of the logarithm of the ratio of oxidized to reduced form, so that the greatest changes in voltage occur when the concentration ratio is very large or very small. In commercial practice this effect makes it relatively simple to maintain the oxidation potential of the solution within the desired limits by blowing with a controlled amount of air.

The examples in Table 1 illustrate the interrelation of some of these factors and indicate various ways in which a constant oxidation potential may be maintained.

TABLE 1—RELATION OF OPERATING FACTORS

Example	Copper, g. per liter	Chloride, g. per liter	Cuprous-cupric ratio	Temp. °F.	Oxidation potential in millivolts
1	45	98	0.012	94	400
2	45	98	0.006	70	400
3	34	74	0.0042	93	400
4	48	53	0.0017	96	400

Examples 1 and 2 represent solutions containing the same amounts of cupric copper and chloride; but the cuprous copper has been allowed to increase so as to counterbalance exactly the change in oxidation potential which would normally result from increase in temperature. In Example 3 the copper and chloride concentrations are three-fourths those of the first two examples, the temperature being approximately the same as in the first example. In order that the oxidation potential remains constant, the cuprous copper concentration is diminished. Example 4 illustrates the fact that the copper to chloride ratio may be altered and the effect compensated by varying the cuprous-cupric ratio. It is evident from the foregoing that the oxidation potential may be varied and controlled by either one or more of these factors. Extremely satisfactory results have been obtained from the commercial units sweetening gasolines with these copper solutions of controlled oxidation potential. Numerous other factors such as control of the pH of the copper solution and the step of stabilizing the gasoline with alkaline sulfide are, of course, highly essential to the successful operation of the Copper Solution Process.

Figure 5 illustrates the Solid Copper Reagent Process. In this method the hydrocarbon oil free of hydrogen sulfide and elementary sulfur is mixed with a predetermined quantity of dissolved air, filtered through the reagent, and sent directly to storage.

Successful performance of the solid treating reagents depends on many factors, among them being the required amount of air at the point where the sweetening reaction takes place. The absolute amount of air required depends, of course, on the mercaptan content of the sour product. Theoretically only about seven volumes of water saturated air (gas) at 80° F. and 760 mm. is required for 100 liquid volumes of gasoline containing 0.01 per cent mercaptan sulfur. Actually a somewhat larger quantity than the theoretical is required because perfectly uniform distribution and 100 per cent utilization are not possible in commercial installations. It has been found, however, that a sufficient quantity of air can be dissolved in the gasoline under the usual conditions of plant operation to keep the reagent regenerated. No loss of oil vapors need be encountered in this regenerative process in as much as the quantity of air needed is so small as to cause no appreciable increase in the vapor pressure of the product during treatment.

To be most effective the air should, of course, be in solution in the oil being treated. This solution is accomplished by injecting the air through a porous alundum tube or plate placed in the sour gasoline stream. This causes the air to be finely divided and the rate of solution is thereby increased. Also, maintaining pressure on the treater insures more rapid and more complete solution of the air in the oil. It seems appropriate at this point to call attention to Table 2 which gives figures for the solubility of air in gasolines at several different temperatures and pressures. These calculations are based upon the excellent work and formulations of Bridgeman and Aldrich (S.A.E. Journal, July 1930).

The solubilities are expressed in terms of standard milliliters of air (0°C. and one atmosphere) per 100 milliliters of gasoline; pressures refer to the *total* pressure on the air-gasoline system. The 85° A.P.I. gravity gasoline is somewhat beyond the limit of accuracy claimed for the Bridgeman et al formula.

It may be noted from Table 2 that the solubility of air in gasolines increases markedly with pressure. For a 10-pound R.V.P. gasoline the solubility of air at 100° F. is increased about twelvefold in going from a pressure of one atmosphere to 50 pounds per square inch gauge. At lower temperatures the solubility is relatively higher, especially at the lower total pressures on the air-gasoline system.

It might appear from the discussion of these

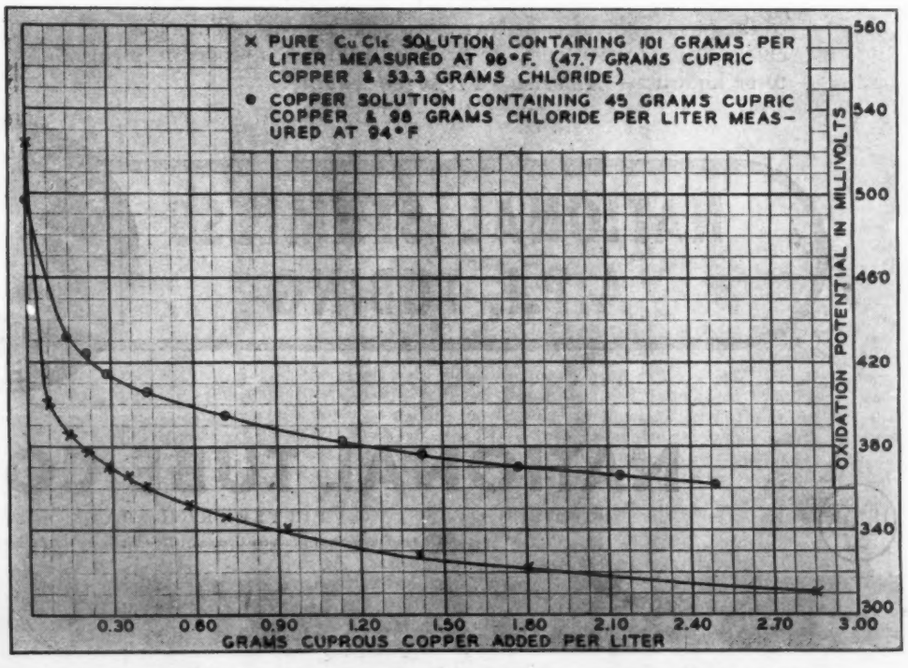

Fig. 4—Effect of low concentrations of cuprous copper on oxidation potentials

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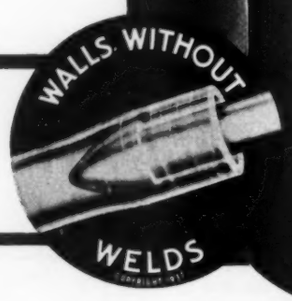

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

several important factors relating to copper sweetening that commercial application would be complicated. Quite the contrary. The process is usually quite simple and almost automatic in operation. The Perco units which have been in operation from one to six years indicate the utility of this new means of sweetening hydrocarbon oils. It is believed that the products being treated in these various commercial units represent as wide a variety as could be chosen; therefore, the results which have been obtained should be representative of what may be expected throughout the refining and natural gasoline industries.

TABLE 2—SOLUBILITY OF AIR IN GASOLINE

R.V.P.	A.P.I. gravity	Solubility per cent by volume: 1 Atmosphere 100° F.	1 Atmosphere 60° F.	15-lb. gauge 100° F.	15-lb. gauge 60° F.	50-lb. gauge 100° F.	50-lb. gauge 60° F.
6 lb.	62	12 4	17 5	34	39	83	88
6 lb.	60	11 9	16 8	32	37	80	85
8 lb.	63	9 6	16 3	31	38	82	88
8 lb.	60	9 1	15 4	30	36	77	84
10 lb.	65	7 0	15 6	30	38	82	90
10 lb.	60	6 4	14 2	27	35	75	82
12 lb.	67	4 2	14 6	27	38	81	92
12 lb.	60	3 7	12 9	24	33	72	81
20 lb.	85	....	9 8	18	38	84	104
20 lb.	75	....	8 9	17	35	77	95

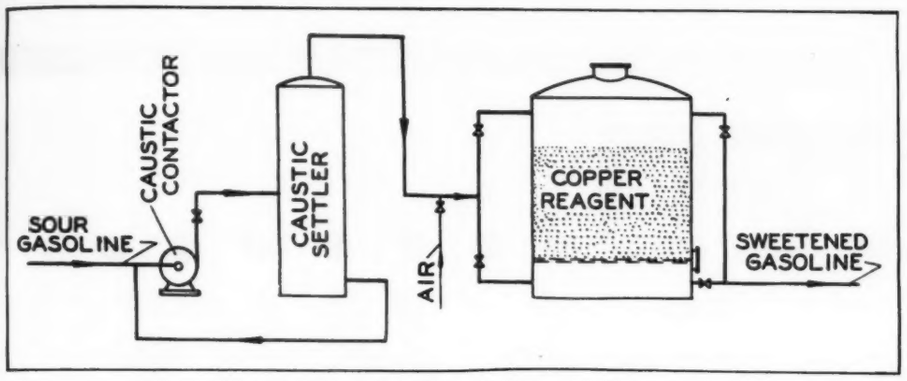

Fig. 5—Solid copper reagent method

The usual loss in octane number incurred in sweetening when using older methods is normally eliminated by copper sweetening, with consequent savings of considerable magnitude in tetraethyl lead requirement. The product is also more responsive to gum inhibitors, if these are used; without gum inhibitors the various gum tests are usually better than when the stock is treated in other ways. The copper treated product is unusually stable when exposed to sunlight, with respect to both color and to corrosion test. All of these effects are attributed chiefly to the absence of the deleterious higher alkyl polysulfides (trisulfides, tetrasulfides, etc.) to which the mercaptans are partially converted, along with the desired disulfides, in other sweetening methods. Copper sweetening can form only the disulfides since no additional inorganic sulfur is present in any form during the reaction.

The large direct savings in chemical and operating costs and the indirect profits through improvement in quality of the products combine to make the copper sweetening methods especially attractive. Quite a number of new plants have been installed during the past year and many others are in the process of construction.

New Highway Attracts Attention

A new highway extending 25 miles north of San Antonio is attracting attention of motorists and highway engineers because of a technique which made it possible to build a heavy-duty asphaltic concrete pavement at a cost of about $10,500 a mile—less than half the usual expenditure for equally smooth and durable pavements. The new pavement represents the modern "black top, black base" technique and consists of an asphaltic or bituminous surface 1½ inches thick on a bituminous base 3 inches thick. The pavement itself is supported by a 12-inch sub-base of crushed stone and caliche.

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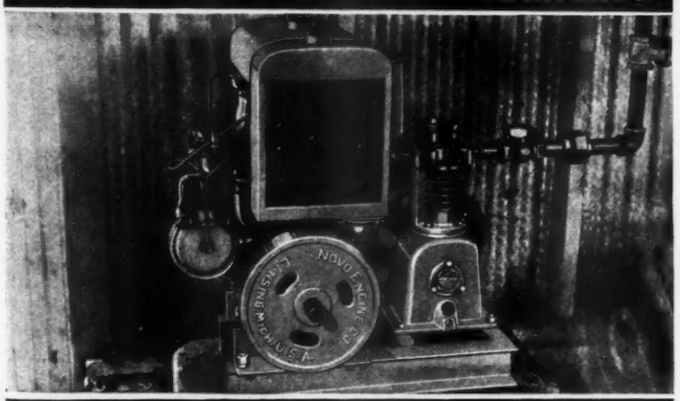

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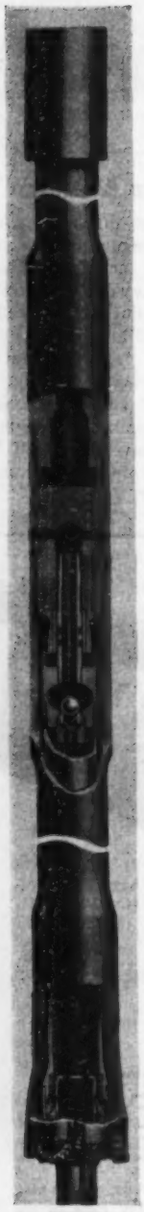

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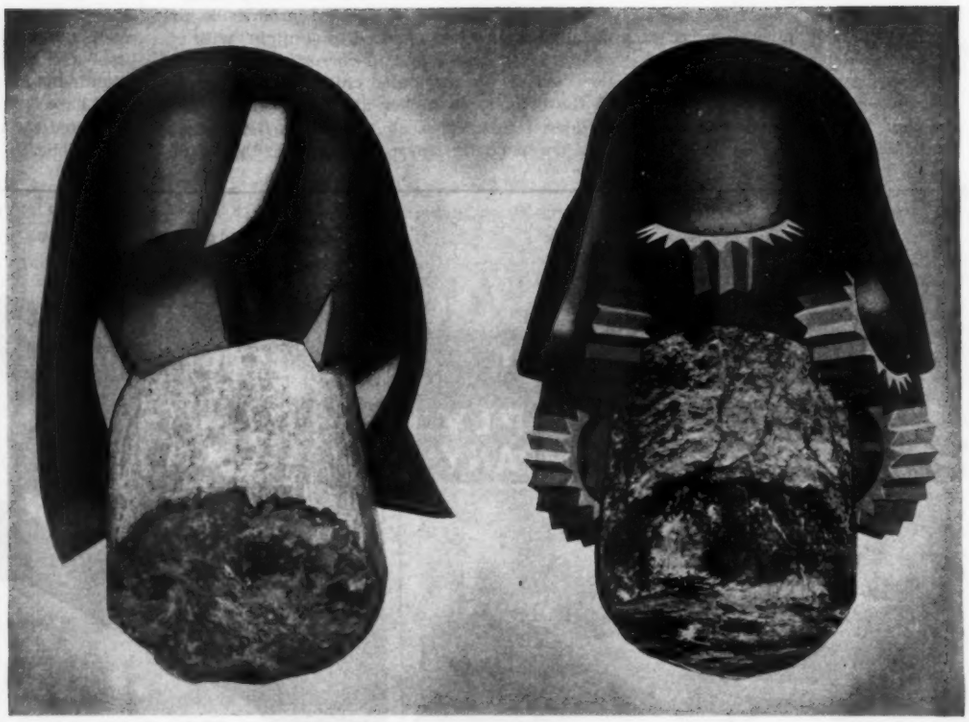

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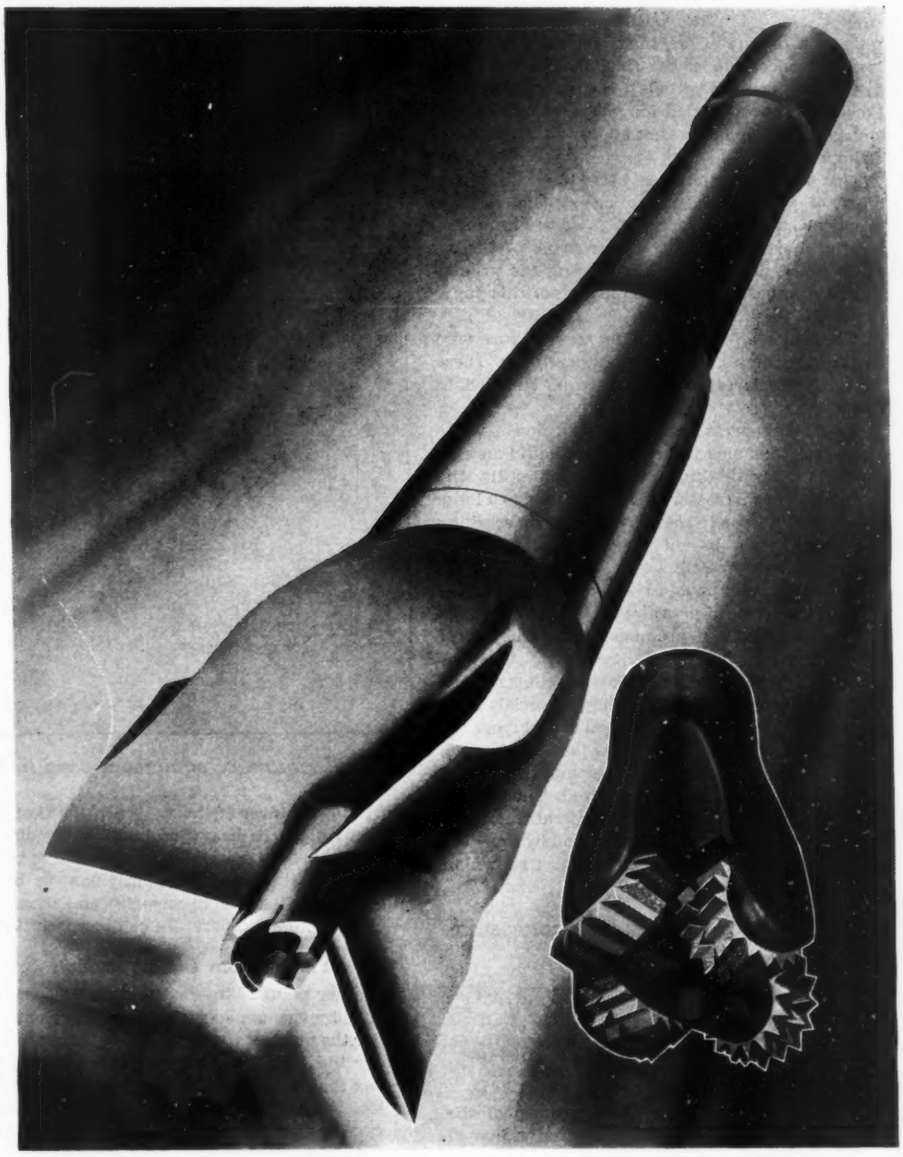

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Vacuum Decomposition of Petroleum Residues

By W. L. NELSON

The continuous solving of new phases in the art of cracking is gradually clarifying our conception of the fundamentals of cracking into a composite whole which is gratifying to those who have puzzled for years over the many apparent discrepancies that appear in its commercial operation.

One moot question has been to evaluate the effect of pressure on a cracking system. From a chemical standpoint, pressure is somewhat effective in altering the chemical structure of the decomposition products and in causing the production of gas, but it is not the purpose of this paper to discuss these factors.

The major effects of altering the pressure on a cracking process are purely physical ones. These physical effects of pressure may be grouped in two ways:

1. A high pressure results in a dense vapor phase and thus aids in keeping the liquid and vapor from separating in the tubes of pipestills. The recognition of this factor was responsible to a large extent for the shift from shell types of cracking equipment to the use of directly fired tubes for heating, as in a pipestill.

2. The other physical effect of pressure—namely, the effect of pressure on the boiling range of the decomposition products, is the subject of this paper.*

At a high pressure, only those products of decomposition which are low-boiling materials similar to gasoline and gas, will be vaporized from the cracking system, whereas if a low pressure is used, even high-boiling products of decomposition such as lubricating oils, can be vaporized. Thus, when conducting decomposition at a temperature of 800-850° F., the products that are produced by cracking at various pressures are heavy oils as shown in Table 1:

TABLE 1—EFFECT OF PRESSURE ON DECOMPOSITION PRODUCTS

Pressure mm. of Hg.	Major product—
760	Kerosene and heavy gasoline
400	Diesel distillate
250	Neutral oil—nonviscous
40	Neutral oil—viscosity 300 at 100° F.
20	Neutral oil—viscosity 500 at 100° F.
15	Cylinder stock—viscosity 80 at 210° F.

The product does not consist entirely of the major products listed in Table 1 but only a small amount of lighter material is produced — usually amounting to less than 10 per cent. Thus, if heavy tar is decomposed at 15 mm. pressure the total product may amount to 80 per cent but about 8 per cent is neutral oil rather than cylinder stock. The production of a small amount of light material is to be expected in a reaction such as cracking, because the charge stock consists of so many different hydrocarbons that it is impossible to select a set of cracking conditions that will not overdecompose or fail to decompose certain of the hydrocarbons in the charge stock. This is exactly the case in the modern cracking processes of today. These processes always produce some gas which is an inadvertant product in the production of cracked gasoline. Apparently this small amount of side reaction product cannot be avoided.

*U. S. Patent 1,990,664 issued February 12, 1935, to W. L. Nelson and G. H. Fancher.

TABLE 2—DECOMPOSITION OF ASPHALT AT DIFFERENT PRESSURES

Experiment No.	Pressure mm.	Yield of liquid product, %	Kind of product—	Properties of product—
1	18	72	Cylinder stock	Viscosity 93 seconds at 210° F.
2	22	69	Heavy neutral oil	Viscosity 600 seconds at 100° F.
3	380	65	Distillate	Gravity 35 A.P.I.
4	450	63	Kerosene	Endpoint 560° F.
	150 lb./sq. in.	53	Gasoline	

From the above results it appears that decomposition does not take place in one rupture of the molecule which produces gasoline and gas, but by a series of ruptures of the molecule, the first products of which are heavy or high-boiling oils and successive products are lower and lower in boiling range, until they are sufficiently low in boiling range to permit them to vaporize and thus leave the zone of high temperature or decomposition.

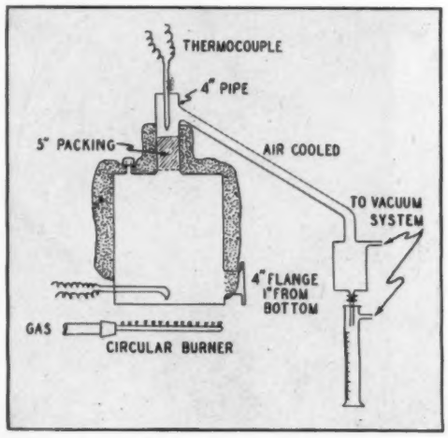


Fig. 1—Diagram of equipment used in tests

Yields From Decomposition

Another point of interest is the yields that are obtained by vacuum decomposition. In general, the heavier the product (or the lower the pressure) the greater the yield. This may also be explained by the fact that the larger the molecule of the product the less scission of bonds has occurred and hence the smaller the losses. The data given in Table 2 illustrate this relationship nicely. These data were obtained by decomposing a semisolid straightrun tar or asphalt at several different cracking pressures. In each case the decomposition was continued until only coke remained. The charge stock contained substantially no lubricating oils because it was obtained from a commercial vacuum plant operating on Mid-Continent oil and was the final residue or tar from this operation. It had a flash-point of 690° F. (decomposition point), a gravity of 11.3 A.P.I. and its Universal Saybolt viscosity was 11,000 seconds at 210° F. (approx. 800 sec. Furol at 210° F.).

The last test shown in Table 2 for the production of gasoline was taken from commercial operation merely for purposes of comparison.

The equipment in which the tests of Table 2 were conducted is indicated in Figure 1. The oil was weighed into the metal vessel or chamber and heated by means of a large gas burner to a temperature at 800° F. as rapidly as possible. The temperature was then held near 800° F. until coke was produced. Thermocouples were used to record the temperature of the liquid in the still and also the temperature of the vapors entering the condenser. The vapor temperature is of little significance because it varies greatly with the rate at which decomposition takes place. Nevertheless, if the vapor temperature becomes too low, part of the product is condensed in the fractionating tower and is returned to the still for further decomposition.

Properties of the Products

When these experiments were first started in 1928, it was expected that the products would be dark colored oils having properties quite different from normal straight-distilled oils, but such was not the case. The products do oxidize readily in air or upon exposure to sunlight, depositing resinous-like products, but these materials can be removed more easily with clay or acid than the asphaltic materials usually present in oils. In general the neutral oil products can be finished to color by percolation through clay and more thoroughly than is the case with regular mixed base or naphthene products.

In all other respects, the oils are similar in properties to similar boiling range stocks produced by straight distillation. If the gravity or viscosity index of the parent stock is high, then the properties of the vacuum decomposition products are also high—and vice versa. Nevertheless, the viscosity index of the vacuum decomposition products are generally a little higher than the indexes of the normal products. The viscosity index of neutral oils produced from Pennsylvania bright stock is particularly noteworthy. In all tests the viscosity index of the neutral oils was universally more than 104 and in several tests they had indexes as high as 115. The cast or flourescense of the vacuum decomposition products is also superior. In most cases the cast is similar to that of paraffin base products even though the parent oil was of mixed base origin.

Vacuum decomposition products should not be confused with the materials that are present in the recycle stock of a cracking plant. Such materials have been decomposed and polymerized perhaps many times and do not have properties that are at all similar to those obtained in vacuum decomposition products.

Applications

Although more than a total of 20 different experiments on vacuum decomposition have been conducted, only two will be discussed in detail. These two will also serve to indicate two important

applications of vacuum decomposition to commercial practice.

One of these fields of usefulness is the production of neutral oils from heavier stocks. The demand for neutral oils has risen during the past few years due to the more widespread use of S.A.E. 10 and 20 and the winter grades of automobile oils —and in January, 1935, the refinery price of Pennsylvania 180 viscosity neutral oil was actually 12 cents a gallon higher than the price of Pennsylvania bright stock. The same was true to a lesser degree for Mid-Continent neutral oils.

In one test a sample of Pennsylvania bright stock was decomposed at about 14 mm. pressure by running to coke. The properties of the charge stock were:

Gravity, A.P.I.	28
Viscosity at 100, sec.	759
Viscosity at 210, sec.	80
Viscosity index	102
Flash, °F. (O.C.)	455
Fire, °F. (O.C.)	515
Pourpoint, °F.	40
Color, plus	8

The total yield of liquid product amounted to 95.3 per cent but its flashpoint was somewhat low. For this reason the raw stock was topped by 5 per cent and by 10 per cent as shown in Table 3:

TABLE 3—PRODUCTION OF PENNSYLVANIAN NEUTRALS

	Raw decomposition product	Treated and topped by 5%	Treated and topped by 10%
Gravity, °A.P.I.	31.2	30	29.4
Flashpoint (O.C.), °F.	260	410	435
Viscosity at 100° F.	153	208	244
Viscosity at 210° F.	45	49	51
Viscosity index	100	104	106
Pourpoint, °F.	50	45/50	45/50
Color	5	2½	2½
Gravity of overhead product	...	43.4	38.8

The other important application at the present time is in the manufacture of diesel fuel oil. The market for such materials is becoming increasingly good and the use of high-speed diesel engines in automotive equipment would create a demand that would equal that of gasoline in importance.

A sample of Mid-Continent semisolid asphalt was decomposed at 380 mm. pressure to a final residue of coke. The properties of the charge stock were as follows:

Gravity, A.P.I.	11.3
Flashpoint (O.C.), °F.	690
Viscosity, 11,000 sec. (about 800 Furol at 210)	210

The yield of diesel fuel oil was 68 per cent, but the yield of finished material after topping and treating was about 65 per cent. The properties of the finished distillate were:

Gravity, A.P.I.	35.5
Color, N.P.A., plus	1
Boiling-range, °F.	400-700

First Pumping Unit Installed at Kettleman North Dome

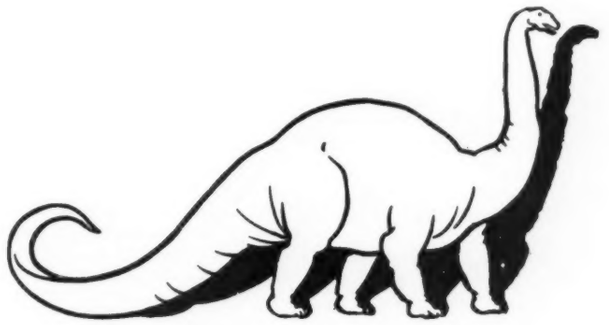
The first pumping unit is being installed in the Kettleman Hills North dome field by Standard Oil Co. on its No. 54-19-J well. A tapered string of rods made up of 1-inch, seven-eighths inch, and three-quarters inch sizes will be used with the pump set at approximately 7,500 feet in the 8,500-foot hole. A 1½-inch sectional-liner plunger pump will be used on 3-inch tubing. The tubing has been in use at the well for gas-lifting, and will be pulled to install the pump, a tubing anchor, and a tubing catcher. A long-stroke pumping unit will be installed on foundations already poured. Since this first sucker-rod installation is intended somewhat as an experiment, the equipment has been selected with flexibility in mind.

Most of the North dome wells are still flowing or are produced by straight gas-lift, while others of lower potential use bottom-hole intermitters, plunger lifts, hydraulic pumps, or other devices of late design. The beginning of the sucker-rod stage is not definitely indicated by the new Standard Oil Co. installation, because considerable time may elapse before a second well is so equipped, and it is certain that at least a year will pass before any great number of wells are put on the beam. However, serious water problems are now being encountered in parts of the field, which make the future of the wells questionable.

Regular Grade Motor Fuel Now Used in New York City Buses

The 1,000 buses operated in New York City by the Fifth Avenue Coach Co. and the New York City Omnibus Corp. are now powered by leaded gasoline. The two fleets will travel approximately 26,000,000 miles during 1937. The number of passengers carried daily would constitute a city of nearly a million population. Engineers of the Ethyl Gasoline Corp. and of the General Motors Corp. have cooperated on fuel problems, carburetor maintenance, and other factors which aid gasoline mileage and keep exhaust gas odors to a minimum.

Because of the unusual traffic conditions in New York, maintenance problems differ from those encountered in other cities, it is explained. Much of the new double-deck equipment employs an automatic transmission, while all of the single deck units use an air-shift arrangement so as to relieve the driver of the physical labor of shifting gears. On many of the lines the gears are shifted from 400 to 600 times an hour, imposing abnormal wear on clutch and transmission parts. Increased gasoline mileage and improved overall performance has followed the adoption of regular grade 70-octane leaded fuel.



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Distributors, jobbers and dealers are invited to 'phone the nearest Sinclair office or write Sinclair Refining Company (Inc.), 630 Fifth Avenue, New York City, for full details about the value of the Sinclair franchise.

SINCLAIR

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Regulations For Installing Storage Tanks

As our city by-laws are somewhat vague with regard to the installation and maintenance of large storage tanks for fuel oil, gasoline, kerosene and other products we have been asked to ascertain what really applies in this respect in other cities.

For instance, how close to the center of a large city can a battery of large tanks holding several hundred thousand barrels of such fluids be installed and maintained with a reasonabe margin of safety?

How should such an installation, if permitted, be insulated against the spread of fire? Just what equipment is considered the most modern and efficient for combating such fires?—C. V. L.

The following information has been supplied by the Oklahoma Inspection Bureau and it is hoped it will serve your purpose:

We believe we are correctly informed that city regulations are mostly based on the Recommended Regulations of the National Board of Fire Underwriters. Such regulations are developed through technical committees of the National Fire Protection Association, the membership of which includes national organizations and associations or their representatives or technical advisors, insurance engineers, laboratory technicians and representative members of government bureaus. Many such regulations are passed upon by the American Standards Association. They have an authoritative standing that is generally recognized and legally accepted.

The Committee on Flammable Liquids was one of the first organized by the National Fire Protection Association and has been continued to the present time. This committee has kept up to date on matters pertaining to the production, use, sale, storage and handling of flammable liquids. The adopted regulations, in so far as they affect safety and fire protection, have been issued in the form of a Suggested Ordinance for the Convenience of City Officials; a copy may be obtained from the association at 60 Batterymarsh Street, Boston, Mass.

Your specific question, as to how close to the center of a large city a battery of large tanks may be located with safety, is answered in the recommended ordinance with the provision "That the storage in tanks above ground or outside buildings is prohibited within the following limits: (Note: These limits to be specified; they should include the mercantile and other congested districts and land near streams or other waterways which would carry burning liquid into congested districts)."

To your second question as to how such installation, if permitted within populous areas, may be safeguarded against the spread of fire, we refer you to the regulations specifying the construction, spacing and diking of tanks, which, if adhered to, will probably prevent a widespread conflagration.

Fire protection for oil tank installations of large size is usually provided by the owner. Water in large quantities and permanent or portable foam equipment is most generally used. Carbon dioxide flooding of tanks has been successfully demonstrated. High-pressure vapor or fog-producing nozzles to be used on hose lines or permanently piped outlets are a recent development of merit.

Public fire departments in many cities are equipped with portable foam generators and foam powder. These are effective on small fires but are seldom available in quantities sufficient to control large tank fires. Water streams are effective in keeping exposed tanks cooled below ignition point and effectively retard or stop spread of fire.

It is our suggestion that if further detailed information is needed on this subject, you make inquiry of the National Board of Fire Underwriters, 85 John Street, New York, N. Y. H. E. Newell, an engineer of that organization, has devoted a great deal of time to this particular subject and I am sure he will gladly give you the benefit of his experience.

Filing Pamphlets and Catalogs

I have accumulated quite a number of miscellaneous catalogs and pamphlets, not of sufficient importance to warrant card indexing, but I should like to classify them in some manner. Can you suggest anything along this line?—S. E. B.

You are first referred to an article by Florence W. Lundell in the November 4 issue of The Oil and Gas Journal on general filing and for your particular problem the added information given below, also furnished by Miss Lundell:

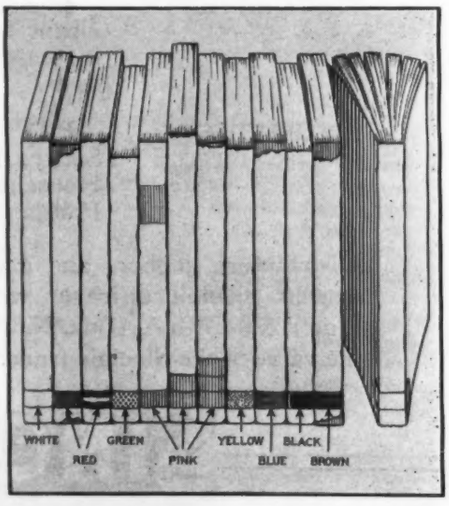
The color band system of identification of miscellaneous publications not important enough to catalog will be found easy to start and maintain.

First the subjects are listed on a card and assigned a color. A sample guide card is shown below.

KEY TO COLOR BAND SYSTEM

Subject:	*Band Color:*
General	(White)
Geology	(Red)
Geophysics	(Second red band)
Production	(Green)
Transportation	(Pink)
Pipe Lines	(2 Pink)
Tankers	(3 Pink)
Refining	(Yellow)
Trade	(Blue)
Conservation	(Black)
Statistics	(Brown)

Any set of subjects can be classified and colors are optional.



Method of marking with color bands

Strips of colored paper or cellulose one-quarter of an inch wide are pasted across the back of the pamphlet at a uniform distance up from the bottom. Strips representing other classifications are pasted in the same manner below and adjacent to the upper strip and form a series of colored bands not unlike a colored well log.

The same scheme can be used on various publications of the government departments. A blue-silver band may represent federal publications, a green band legislative branch, a gold band the senate and a silver band house of representatives. Thus a senate document on "Prices, Profits, and Competition in the Petroleum Industry," is banded with blue-silver, green and gold bands and all other senate publications have the same combination of colored bands.

The color band system can also be used on maps, using different colors on the end of tubes or wrappers for each state and other geographical grouping and a combination of colors for the type of map filed.

Percentage Not Properly Expressed

Please refer to article "Comparison of Wildcat Successes," page 69, October 28 issue. Third paragraph states major companies drilled 160 wildcats, with 43 discoveries—or 27 per cent. Other operators drilled 1,175 wildcats with 61 discoveries—or ".052 per cent." This should, of course, be 5.2 per cent. This must have been figured with a "slip-stick"—they can't handle decimals.—W. J. M.

Thank you for calling our attention to this error. You are correct in stating the second figure should be 5.2 instead of .052. The error was occasioned by not having multiplied the decimal by 100 as was done in the first instance.

To restate these two propositions—

$$\frac{43}{160} = .27 \times 100 = 27 \text{ per cent}$$

$$\frac{61}{1175} = .052 \times 100 = 5.2 \text{ per cent}$$

Duties of an Oil Gauger

Could you give me information regarding the duties of an oil gauger? Where can I find details concerning the methods employed in gauging oil?—J. A. H.

In reply to your inquiry suggest you secure a copy of the September 16, 1937, issue of The Oil and Gas Journal and read the article on page 135 by Otto D. Stallard, Jr., chief gauger, Magnolia Pipe Line Co., Dallas, Tex., on "Gauger's Equipment."

While this does not fully answer your question I believe you could secure additional information as to the duties of the gauger by writing to the chief gauger for some oil company. The equipment will tell a large part of the story.

The American Petroleum Institute, Division of Production, 1508 Gulf States Building, Dallas, Tex., has issued Bulletin No. 25 covering recommended methods for gauging, testing and sampling oil as well as strapping tanks. You might secure copy of this bulletin by writing the above address.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Reynolds Number for Study of Liquid Flow

The formula $DV\rho/\mu$ is presented as the Reynolds number and we ask that you kindly explain this.—P. B. H.

The Reynolds number, applied in a study of the mechanism of the flow of fluids, is discussed in numerous books treating with the properties of moving liquids. The explanation following is based on Heat Transmission, by W. H. McAdams:

The numerical value of any dimensionless group is the same regardless of the units of measurement used. Consider the isothermal flow of a liquid weighing 56 lbs./cu. ft. having a viscosity of 0.0056 lb./sec./ft., at 5 ft./sec. through a 0.0833-ft. I.D. pipe. Evaluating all terms on the basis of the f.p.s. system of units, the Reynolds number would be = (0.0833) (5.0) (56) 10.0056 = 4165. If c.g.s. units are used, then $DV\rho/\mu$ = (2.54) (152.5) (0.898) 18.33 = 4165.

In this formula D represents inside diameter in feet; V = average velocity in ft./sec. = [cu. ft./sec. ÷ cross section in sq. ft.]; ρ = density in lb./cu. ft.; and μ = viscosity in lb./(sec.) (sq. ft. of cross section), is often used instead of the product $V\rho$. The term $DV\rho = DG/\mu$ is abbreviated as Re. Also Re_c is the Re value below which streamline motion exists over the entire cross section. As is well known, Re_c depends upon a number of factors, such as the distance of the cross section considered from the entrance to the pipe and the type of entrance. The following table shows values of Re_c determined by several methods:

CRITICAL REYNOLDS NUMBER FOR CIRCULAR PIPES

Method:	Re_c
Pipe friction	Between 2100 and 2300
Color band	Above 2000
Stethoscope	Between 1890 and 2130
Motion of colloidal particles	Between 2000 and 3700

For purposes of illustration, the critical value of Re will be taken as 2100. Between Re of 2100 and, say, 3100, lies a transmission zone from streamline to turbulent flow, while above a Reynolds number of approximately 3100, the flow will be considered as turbulent.

Color Inhibitors for Kerosene

I would greatly appreciate your giving me any information you have available in connection with the addition of a gum inhibitor for kerosene to stabilize its color, or perhaps you know of some other method which would service this purpose.—R. L. H.

Color and gum stability of gasoline and kerosene is largely a matter of refining, including the purity of the chemicals, the use of steam in the stills, proper settling and adequate washing. Kerosene may have a poor color stability due to the acid used being contaminated. The quality of the acid used in treating is important. When gum and color are already in evidence, inhibitors are of little value.

There are many substances that give good results when added to both gasoline and kerosene for the purpose of stabilizing gum and color or preventing their formation. Some of these act to prevent or reduce to rate of formation of both gum and color. The action of inhibitors appears to vary with the product. The chemical composition of the kerosene is related to the source of the crude oil and the refining treatment. An inhibitor which has given good results with one oil may not be suitable to another. The inhibitor should always be selected with relation to the particular product.

It appears that the formation of color in kerosene and gasoline is related to some form of oxidation. The main service performed by an inhibitor is its action in preventing, or retarding chemical reaction. Any substance which will act to arrest or reduce oxidation should serve as a good inhibitor provided it is sufficiently soluble in petroleum oils. Several amines, anthracene, camphor, phenanthrene, pyro-gallol and naphthols are examples of the compounds used.

Investigating color stabilizers for kerosenes Rather and Beard found: Thiocarbanilid, hydroquinone, resorcinol, pyrocatechin, pyrogallol, phoroglucinol, 1,2,4-trihydroxybenzene, butyl pyrogallol, alkyl-substituted dihydroxybenzene, alkyl-substituted polyhydroxybenzene, ethanolamines, urea, and thiourea were among the compounds that would stabilize the color. After storage for 10 to 14 months the color was reduced from 18 and 21 to 12 and a few to —1 or less. The polyhydroxybenzenes, proved to be capable of restoring the oils to nearly the initial color, and the renewed color presisted with little loss for six months. The antioxidant was dissolved in ethyl or isopropyl alcohol and the solution was added to the oil in the proportion of 1 gallon to from 2,000 to 15,000 gallons depending on the age and condition of the oil. The kerosene should not be stored in the presence of water.

References: Rather and Beard, Jr., The Oil and Gas Journal, May 14, 1936, p. 209. Nash and Howes, Principles of Motor Fuel Preparation and Application. W. W. Scheumann, The Oil and Gas Journal, April 6, 1933, p. 22.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Salt
(Sodium Chloride)

Use—Making freezing mixtures and refrigerating brine.

Form—White hygroscopic crystals.
Odor—None.
Formula—NaCl.
Specific gravity—2.161.
Melting point—1,479° F.
Boiling point—2,714° F.

Solubility—Cold water 35 per cent; boiling water 39 per cent.

LIMITATIONS

There are several grades, including: Chemically pure, crude rock, sea, evaporated fused, ground, powdered crystals. Specifications are usually confined to color (max. yellowish brown) and foreign material (max. 1 per cent).

Classifying Lubricating Oils

Thomsen in his book, Practice of Lubrication, gives a classification of lubricating oils including—Dark cylinder oils, viscous low setting point oils, white oils and medicinal white oils and others. Is this classification correct or is there another more acceptable?—J. I. C.

There have been many proposals for a standard system for classifying lubricating oils but none has been accepted by the technical societies or the trade. The simplest method, used for many years by the federal government, was based in a broad way on viscosity, making use of the vague terms light, medium and heavy. These were modified to extra light and extra heavy. It appears to be the more logical suggestion that the lubricating oils be classified according to a specific property or a combination of properties. However, many engineers and operators prefer a scheme whereby the lubricating oils should be classified according to use. The combination of the two has been adopted by Thomsen.

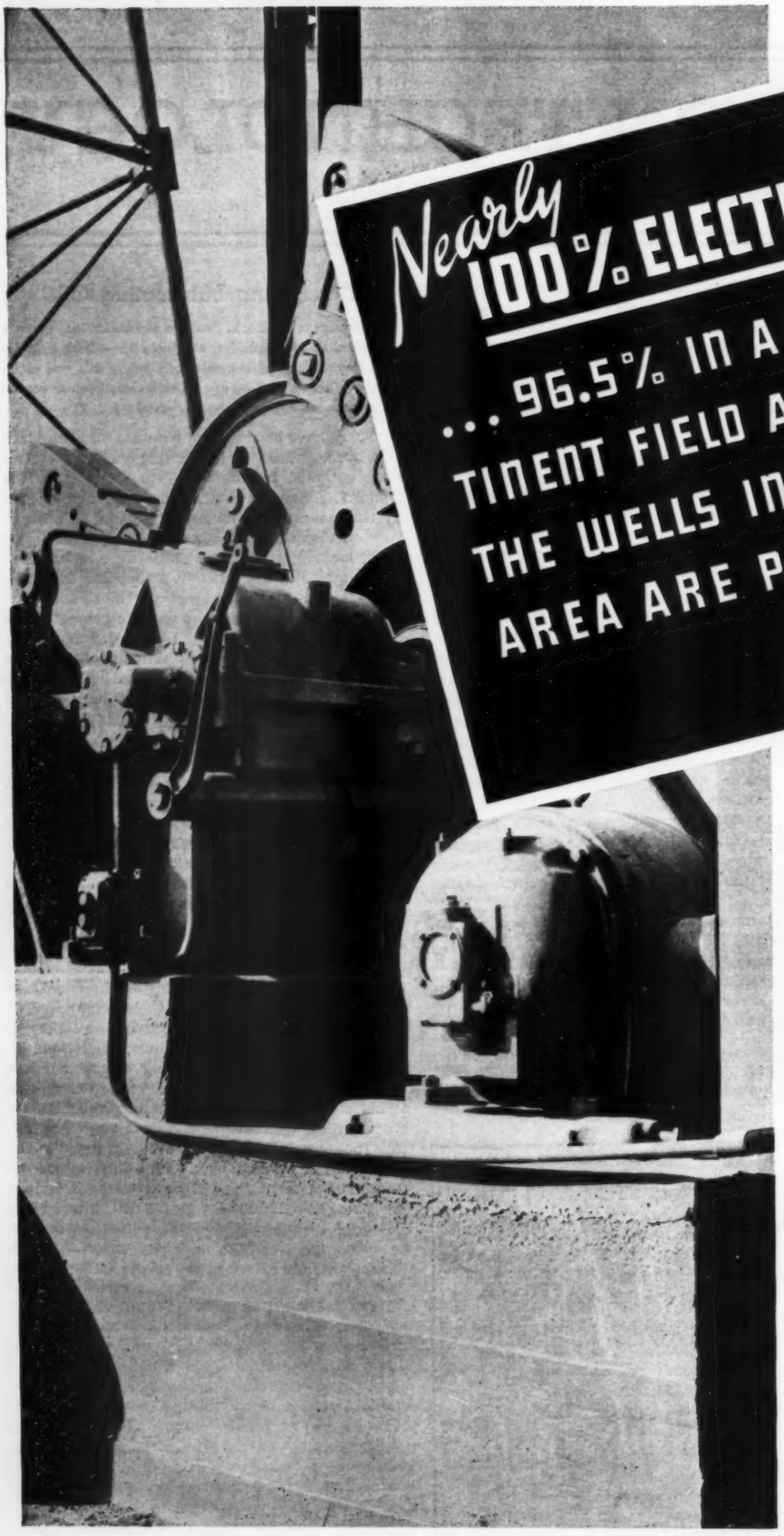
The Society of Automotive Engineers suggested the grading of lubricating oils for motor use. These are the S.A.E. numbers, 10, 20, 30, etc., that have a meaning in terms of viscosity, as determined at 100°, 130° or 210° F. The S.A.E. 10 oil has a viscosity that may range from 90 to 120 Saybolt Universal at 130° F.; S.A.E. 20 from 120 to 185 viscosity at 130° F.; S.A.E. 30 from 185 to 250 at the same temperature. This system is much better than that making use of such indefinite words as light and heavy, formerly used.

The latest edition of Thomsen's Practice of Lubrication classifies all lubricating oils into dark cylinder oils; filtered cylinder oils and bright stocks; ordinary lubricating oils, as spindle and light machinery and heavy machinery oils; high-grade lubricating oils; dark lubricating oils; bloomless oils; white oils, medicinal oils. These descriptive terms are further defined by the properties, including flash, specific gravity, viscosity, color, setting (pour) point. Viscosities are designated in the classification by numbers, which are closely defined. The classification, with numbers for viscosities, is dark cylinder oils Nos. 11-16, filtered oils and bright stocks, Nos. 11-15, spindle, Nos. 1-8, heavy engine, Nos. 9-12, dark oils, Nos. 10-13. The viscosity numbers are given in the table:

VISCOSITY NUMBERS IN SAYBOLT SECONDS

No.	Saybolt 100° F.	Universal 130° F.	Seconds 210° F.
1	65	45	29
2	80	50	31
3	95	60	32
4	125	70	34
5	160	81	36
6	180	86	38
7	240	115	43
8	350	160	50
9	500	230	55
10	700	320	65
11	....	...	80
12	1,400	470	90
13	1,800	600	100
14	....	...	130
15	....	...	165
16	....	...	190

Thomsen's classification is one of the most complete classifications that has been suggested for lubricating oils. It appears to have been of service both to the producer and consumer.



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PETROLEUM ELECTRIC POWER CLUB

FIELD OPERATIONS

Summarizing the Week's Developments

Two Oklahoma pools were given extensions the past week, the Jesse pool of Pontotoc County in section 2-1n-7, and the Laffoon pool of Lincoln County in section 4-13-16. The Hughes County wildcat in section 8-5-10 was preparing to deepen to Wilcox sand after showing for a small producer in Cromwell sand.

KANSAS

A wildcat pool opener in section 12-22-13w, on a cross trend between the Gates and Hudson pools in Stafford County, Kansas, made a potential of 945 bbls. of oil after acidizing. A one-half mile south extension to the Trapp pool in Barton County was indicated at an outpost in section 8-16-13w. Wildcats in 12 Kansas counties were started the past week, despite snow and subzero temperatures.

TEXAS

New sands discovered in the Orange pool in Orange County, and the Segno pool in Polk County featured the Texas Gulf Coast news of the week. The discovery wells produced 808 bbls. and 737 bbls. respectively, both through chokes. The Old Ocean and Hardin pools were extended. In Southwest Texas a wildcat south of Alice, Jim Wells County, showing oil, is the object of close attention. Wildcatting is increasing and spreading in the Rio Grande Valley. The East Texas field was shut down on Sunday, November 20, for a 24-hour period, during which bottom-hole pressure tests were made on key wells. The second Opelika Trinity sand test in Henderson County has been turned into a gas well at a plugged back depth. Two Woodbine tests in Cherokee and Upshur counties were dry and abandoned. Magnolia Petroleum Co.'s deep Ordovician test in Pecos County, West Texas, was the center of attention as it is checking higher on top of the Simpson than other deep wells thereabouts. Eleven new locations were made in the K.M.A. field in Wichita County and 37 wells are drilling to the deep pay, which is the sensation of the year in Texas.

MICHIGAN

Eleven new wells were completed in the Buckeye field in Michigan with a total initial production of 5,700 bbls.

NEW MEXICO

Eventual linking of the Cooper and Lynn pools in Lea County, New Mexico, was indicated with the completion of a large naturally flowing well near the northwest edge of the Cooper field. The well, in section 34-23-36, flowed 112 bbls. of oil through 1-inch choke on tubing in one hour, with 3,000,000 feet of gas. The 3-mile south extension well in the Vacuum area in section 1-18-34, flowed 157 bbls. of oil in five hours and was shut in for lack of storage at 4,464 feet.

ILLINOIS

Prospect of a new pool, or a western extension to the Clay City pool, in Clay County, Illinois, is given by a favorable drill-stem test in a well on the Clay City townsite. Eleven new producers were completed in the Central Basin.

Completions in All Fields

(Week Ending November 20, 1937)

	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
N. Y., Pa., W. Va.	71	32	5	108	4,075	3,597
Ohio	9	9	6	24	1,097	739
Indiana	2	0	0	2	107	172
Kentucky	11	8	5	24	643	287
Illinois	11	0	1	12	257	35
Michigan	14	0	0	14	720	742
Kansas	36	3	7	46	2,370	1,526
Oklahoma	26	2	8	36	2,374	2,347
Texas:						
North Central Texas	24	0	16	40	2,474	2,464
West Texas	53	0	2	55	2,398	1,444
Texas Panhandle	19	1	0	20	721	595
East Texas	48	0	1	49	2,146	2,304
East Central Texas	5	0	3	8	648	350
East Texas Border	4	1	0	5	303	151
Gulf Coast Texas	33	0	2	35	1,399	1,131
Southwest Texas	36	0	8	44	2,885	2,628
Total Texas	222	2	32	256	12,974	11,067
North Louisiana	10	4	3	17	590	612
Gulf Coast Louisiana	4	0	5	9	405	368
Total Louisiana	14	4	8	26	995	980
Arkansas	4	0	1	5	156	79
Montana	2	1	1	4	209	225
Wyoming	0	1	0	1	97	112
Colorado	0	0	0	0	18	27
New Mexico	10	0	2	12	633	522
Utah	0	0	0	0	3	6
California	22	0	5	27	1,338	1,028
Total United States	454	62	81	597	28,066	23,491
Total previous week	445	70	115	630		
Difference	9	8	34	33		

Outstanding Fields—Highlights

(Week Ending November 20, 1937)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Hastings	7	21	11	6,139	393	20,965
McCampbell	2	13	4	612	85	4,312
Saxet	12	19	5	437	576	45,012
Benavides	1	14	8	589	107	5,397
East Texas	51	120	48	2,263	23,980	486,599
Talco	7	24	1	392	549	35,850
Ector County	14	72	9	5,588	727	29,100
Winkler County	6	31	12	10,416	1,500	43,400
OKLAHOMA						
Fitts	3	16	5	939	917	80,850
Billings	1	4	1	1,037	57	7,400
KANSAS						
Ellis County	7	29	5	10,373	251	8,005
Barton County	14	44	7	6,049	277	10,850
Russell County	11	34	9	12,572	943	34,605
Rice County	10	54	4	2,856	1,026	34,075
NEW MEXICO						
Lea County	13	111	10	1,666	1,534	86,750
LA-ARK-TEX						
Rodessa, Ark.	0	17	3	1,200	42	12,531
Rodessa, La.	0	14	0	0	421	45,232
Rodessa, Tex.	2	16	5	1,640	371	22,599
Lisbon, La.	0	15	1	1,450	139	1,702
Jennings, La.	1	12	2	550	77	13,615
MICHIGAN						
Buckeye	6	58	11	5,700	294	26,154
CALIFORNIA						
Wilmington	6	22	6	1,805	310	60,800
ILLINOIS						
Central Illinois	43	112	11	2,500	201	17,797

Eastern Field Report

By STAFF CORRESPONDENT

THIRTY-ONE NEW GAS WELLS IN LOWER EASTERN DISTRICT

PITTSBURGH, Pa., Nov. 22.—Encouragement was given to deep drilling in the lower eastern fields with the finding of some gas and oil in a wildcat test in Wood County, West Virginia. In Tygart district, W. H. Bickel struck about 30,000 feet of gas in the Oriskany sand on the Reese Blizzard farm, and shut down over night before deepening. In the morning the bailer was run in and found about 80 feet of light green oil in the hole.

In this test the Corniferous lime was topped at 4,470 feet with the top of the Oriskany sand at 4,585 feet. At 4,597 feet the gas was struck and the oil came in at the same depth. The well was shut down to install a master gate on the casing, after which drilling will be resumed.

The test is located on the Belleville Quadrangle, due south of South Parkersburg, about three-quarters mile southeast of Hope Hill school, and about one-quarter mile south of the hard road, and it has a ground elevation of 673.79 feet, placing the Oriskany sand 3,911.21 feet subsea.

Southeast of this test, Carnegie Natural Gas Co. reached the top of the Corniferous lime on the W. O. Caplinger farm, in Tucker district, Wirt County. It was placed at 5,133 feet with a surface elevation of 837 feet and makes the top of this formation 4,296 feet subsea.

SOUTHEAST OHIO

In Columbiana County, section 26, Wayne Township, the Natural Gas Co. of West Virginia drilled through the Clinton sand in the deep test on the D. Desellem farm. In this test the Corniferous lime was at 4,170 feet; Oriskany 4,411 feet and dry; Newburg 5,912 feet with some sulfur gas and then water; Clinton 6,303 feet with a showing of gas at 6,331 feet and 6,343 feet. At 6,460 feet the sand was passed and the formation will now be shot for a test of this gas.

In Knox County two good wells were completed. In section 1, Jackson Township, Davis & Rugg completed a test on the French C. Veatch farm in the Clinton sand at a depth of 3,194 feet and it produced 116 bbls. the first day after shot. In section 10, same township, the Pure Oil Co. completed a second test on the Donna M. Miller farm in the Clinton sand at 3,139 feet. It produced 106 bbls. the first day after shot.

In Licking County, Rutledge & Mossholder completed No. 12 William E. Teagarden in section 15, Perry Township, in the Berea sand at a depth of 756 feet. It produced 5 bbls. the first day after shot.

In Meigs County, Clarence Riley, on his own property in section 19, Sutton Township, completed a well in the Berea sand at 1,782 feet. It is a gasser gauging 50,000 feet a day along with one-fourth barrel of oil.

In Perry County, the Atha Oil Co. completed No. 20 Melick Brothers, section 20, Madison Township, in Clinton sand at 3,095 feet. It started at 10 bbls. a day, with 50,000 feet of gas, and will make a small pumper.

In Washington County, H. H. Meyers and others completed a 40-bbl. well on the John Reimenschneider heirs farm on Neff Ridge in section 7, Liberty Township, in Maxton sand at 1,423 feet. In section 18, Ludlow Township, Homer Newhart and others No. 2 Rinard was completed in Berea Grit at 1,741 feet. It produced 5 bbls. the first day after shot, and 175,000 feet of gas. On Gossett Fork in section 20, Liberty Township, Otto Heidman and others completed a test on the Sparling heirs farm in the Second Cow Run sand at 1,230 feet. The Grit was dry at a depth of 2,100 feet but it is a gas well gauging 43,000 feet a day from the shallower formation.

SOUTHWEST PENNSYLVANIA

In Southwest Pennsylvania, Amwell Township, Washington County, Carnegie Natural Gas Co. completed the No. 4 N. B. Redd at 2,633 feet as a small producer with the Gantz sand at 2,615 feet and the oil at 2,633 feet.

In South Franklin Township, Washington County, Dunn Mar Oil & Gas Co. completed No. 4 J. T. Baldwin at 2,971 feet. Fifth sand was topped at 2,946 feet, with about 10 bbls. of oil a day at 2,948 feet, and again at 2,952-58 feet.

In this township, Carnegie Natural Gas Co. is drilling at 2,336 feet in No. 3 Alberta Iams. In Amwell Township this company has started two wells and is drilling at 260 feet in No. 1 P. W. Reynolds and 155 feet in the F. M. Closser test. In South Franklin Township, F. K. Fowcett and others are down 1,850 feet on the Clarissa Ramsey (Bonham) farm. South Penn Oil Co. has a rig up for No. 3 Piedmont Coal.

In South Strabane Township, Washington County, Penn Ohio Oil & Gas Co. is drilling at 3,485 feet in No. 2 Porter Brothers. In North Strabane Township, Keystone Gas Co. is down 2,650 feet in No. 1 J. T. Beabout and 265 feet in No. 1 H. W. Davidson. In Morris Township, Duquesne Gas Co. is down 200 feet starting the test on the D. B. Hughes farm. In East Finley Township, Parkinson, Plants & Co. are drilling on the L. A. Phillips farm below 180 feet.

Greene County

In Washington Township, Greene County, Equitable Gas Co. is drilling at 2,157 feet in the Pratt Yeager test with the Big Injun sand topped at 2,013 feet, 424,000 feet of gas at 2,019-22 feet but water came in at the same depth. Charles Mong and others have rigged up to spud No. 2 Jacob Johns and the Carnegie Natural Gas Co. is rigging up No. 2 Sadie A. Connors.

In Morris Township, Greene County, William Smith and others are drilling at 2,935 feet on Fonner heirs farm. In Center Township the Carnegie Natural Gas Co. is down 2,414 feet in No. 3 J. W. Milliken and has rig on the ground for No. 3 J. H. Orndoff. Rutan Oil Co. has reached 2,211 feet in No. 4 C. T. Harvey. Charles Mong and others are drilling at 2,140 feet in No. 2 J. L. Metz (Weir).

In Springhill Township, Southwest Pennsylvania Gas Corp. is drilling at 1,350 feet in No. 3 Thomas Smith. Taylor Oil & Gas Trust is shut down for 10-inch casing at 850 feet in No. 5 John Taylor. J. H. McNichols & Co. have reached 700 feet in No. 3 J. W. McNichols.

In Wayne Township the Equitable Gas Co. is drilling No. 4 Sanford C. Brock at 1,870 feet. The Manufacturers Light & Heat Co. is down 1,950 feet on the Haddie J. Ross farm. In Richhill Township, Smith McCracken is cementing at 2,220 feet in the Asa Hughes test. Manufacturers Light & Heat Co. was drilling at 1,925 feet, deepening No. 1 Albert Lyons. Convex Glass Co. reached 2,506 feet on the Vanvoohris farm in Dunkard Township, with the Fourth sand gas decreasing to 100,000 feet a day. In Richhill Township, J. L. Blair is drilling at 2,060 feet in No. 10 W. J. Bryan with the Big Injun sand at 1,874 feet and 105,000 feet of gas at 1,945 feet.

Deep Tests

In Washington Township, Norwood P. Johnston and others are drilling at 6,578 feet or 103 feet in the Onondaga in the test on the James McBurney farm in Mount Pleasant Township.

In Beaver County, John T. Galey and others have drilled 4,100 feet in 38 days in the test on the James Tennis heirs farm in South Beaver Township. The T. W. Phillips Gas & Oil Co. have reached 3,200 feet on the James Smith farm.

In Allegheny County the test of South Penn Oil Co. and others on the Christian Z. Schove farm in Hampton Township is still fishing for tools lost at 6,238 feet. In Fayette County, Potter Development Co., William E. Snee and others are drilling at 3,500 feet No. 2 Summit Hotel, Chestnut Ridge, South Union Township.

WEST VIRGINIA

Three producers were completed in West Virginia during the week, of which the largest was that of W. C. Kingery, trustee, on the Block No. 3, Guyandotte Co. lease in Harts Creek district, Lincoln County. It was drilled in the Big lime, depth 1,500 feet, and is good for 20 bbls. a day.

In Wood County, South Penn Oil Co. completed No. 6 Monroe McPherson farm in Walker district in Berea sand at 2,242 feet, and it is showing for 10 bbls. a day. In Wetzel County, Browns Run Gas Co. completed a test on the E. L. Lough farm in Clay district in the Injun sand at 2,224 feet and it is a 1-bbl. pumper.

Gas Wells

In Cabell County, W. B. Wilson and William Walton completed a gasser on the Walton and Wilson lease in Guyandotte district at 2,987 feet. Brown shale lay at 2,510-2,939 feet; with 192,000 feet of gas 20 hours after shot at 2,530 feet, 2,856-2,967 and 2,910 feet.

In Braxton County, Pittsburgh & West Virginia Gas Co. drilled No. 7,633, Parkersburg Mill lease, Birch district, to 2,639 feet and it was dry, abandoned.

In Calhoun County there were several completions. In Sherman district, F. F. McIntosh completed a test on the J. R. Lockney farm as a gas well gauging 40,000 feet a day before shot. The Big Injun was at 2,260-2,307 feet with the gas at 2,291-99 feet. In this district the McCall Drilling Co. completed a gas well on the W. H. Walters farm. The Big Injun was at 1,840-99 feet with 58,000 feet of gas before shot at 1,857-63 feet, total depth 1,960 feet. In Washington district, Kenny M. Hunt test on the Lena Weir farm at 2,269 feet is a gas well gauging 150,000 feet a day along with 2 bbls. of oil; Big Injun at 2,197-2,269 feet with gas at 2,219-40 feet and oil at 2,240-69 feet. In Sheridan district, Chemical Oil & Gas Co. drilled No. 2 A. L. Yoke through the Berea sand to 2,512 feet and it was dry.

In Gilmer County there were eight gas wells and one dry hole. In DeKalb district, A. E. Ellis test on the Delbert Stalnaker farm gauged 700,000 feet a day after shot in Big Injun at 1,890-1,912 feet. In this district, Pittsburgh & West Virginia Gas Co. No. 7,626 on the A. M. Beall farm had Stray sand at 1,881-1,905 feet, with gas at 1,886 feet. In the same district, Carnegie Natural Gas Co., on the Kanawha Union Bank Co. lease had a small gas well in Injun sand at 2,064 feet.

In Glenville Independent district there were several wells. Pittsburgh & West Virginia Gas Co. test on the S. A. Hayes farm at 1,547 feet is good for 640,000 feet a day. Bush & Ferrell test on the Blanche Reed farm started at 1,000,000 feet a day from Big Injun at 1,773 feet. Massey & Jarvis Drilling Co. test on the Ivan Bush farm at 1,643 feet was completed in Big Injun sand and is good for 200,000 feet a day. This company completed a test on the Gainer & Wilfong lease at 1,355 feet, Maxton sand, and it is gauging 500,000 feet a day, and another on the B. S. Messenger farm in the Big Injun sand at 1,675 feet good for 100,000 feet a day. In Troy district, Hope Natural Gas Co. drilled No. 2 Fisher heirs to 2,262 feet through the Gantz sand and it was dry.

In Lewis County the McCall Drilling Co. test on the Andrew Edmiston farm in Freemans Creek district had Injun sand at 2,143 feet and is good for 250,000 feet of gas a day.

In Lincoln County the Brown Gas Co. completed No. 3 Millard Pratt farm in Sheridan district as a gas well at 1,887 feet. Berea lay at 1,850-63 feet and yielded 116,000 feet a day.

In Marion County the Eshenbaugh Oil & Gas Co. completed a test on the Walter D. Straight farm in Mannington district at 3,450 feet. It is a gas well through

(Continued on Page 103)

Southwest Texas District

RIO GRANDE VALLEY SCENE OF WIDESPREAD TEST WORK

By F. L. SINGLETON

CORPUS CHRISTI, Tex., Nov. 22.—Southwest Texas operators were watching the results of a completion test at H. H. Howell and others No. 1 Talbert, a wildcat about 7 miles southwest of the town of Alice in the Lavaca Grant Survey. Bottomed at 6,012 feet, the hole was plugged back to 5,179 feet, and perforations made simultaneously at 5,140-42 feet, 5,078-5,100 feet, 4,895-4,900 feet and 3,600-07 feet. While swabbing, the well is reported to have made a large head of oil, but when the swab was run the second time it showed wash water, some oil and salt water. The bottom perforations have been cemented off from 5,140 up to 4,895 feet and swabbing continues from the 3,600-foot sand with the well showing oil and wash water with a salty taste. Should the well fail to flow at this depth, perforations will be made in another sand at 3,300 feet.

In the same county, and in the Seeligson area, Magnolia Petroleum Co. was testing No. 7 A. Seeligson after perforations were made at 6,713-23 feet. The well is on a large block held jointly by the Transwestern Oil Co., Sinclair Prairie Oil Co. and Magnolia Petroleum Co. The hole was carried to a depth of 8,162 feet and several possible sands have been encountered.

Bad Showings No Deterrent

Northwest of the Agua Dulce field, Nueces County, Southern Minerals Corp. continue to test No. 2 King, but prospects of opening commercial production were not encouraging. The well is jetting about 320 bbls. of fluid per day, of which 75 per cent is salt water and the balance oil. It is being jetted with gas under a pressure of 150 to 500 pounds. The well is being tested through perforations at 4,017-20 feet, in the sand section which two weeks ago showed 640 feet of oil and 850 feet of salt water. This is the second well to be drilled by the company, and regardless of whether or not the present test makes a commercial producer, additional development is expected due to the favorable showings that have been encountered in both tests.

Prospects of opening a new field or an important extension to the South Clara Driscoll field, Nueces County, were not bright, as salt water made its appearance in Mills Bennet Production Co. No. 1 Johnson, which is being abandoned after swabbing salt water with some oil, at a plugged-back depth of 5,111 feet.

Two miles northwest of the Saxet field, Nueces County, L. A. Douglas has spudded his No. 1 Charles McKenzie in Survey No. 419, which is scheduled to be drilled to a depth of 6,750 feet.

One and a half miles north of the town of Mathis, in the Delgado Grant Survey, San Patricio County, Argo Oil Corp. was preparing to test No. 1 Soechnge at a plugged-back depth of approximately 4,841-46 feet, at which point it attempted to blow out several weeks ago. This was a projected deep test, but trouble developed after encountering heaving shale at 6,230 feet. The Cockfield section was topped at 6,190 feet.

Two completions were reported for the Flour Bluff field, both having been made by Humble Oil & Refining Co. No. 9 Webb, Lot 8, Block 56, flowed 132 bbls. per day on a potential test from sand topped at 6,630 feet and bottomed at 6,658 feet, while No. 7 Gulden, Lot 32, Block 47, flowed 190 bbls. per day through a one-eighth inch choke from sand at 6,630-56 feet, the total depth. Drilling in the field is more or less routine at the present time, but several proposed outpost tests are expected to be drilled offshore from the field proper in Nueces Bay in the near future.

Heyser Field Featured

The discovery of a new sand, a half mile east extension and the completion of several producers were the highlights in the Heyser field of Victoria and Calhoun counties. Offsetting a 5,700-foot producer in the north extension area in Victoria County, Gulf Oil Corp. No. 1 Traylor opened a new sand when it tested 100 bbls. of pipe line oil on a drill-stem test in oil sand topped at 6,030 feet and bottomed at 6,037 feet, the total depth. A short string of liner has been cemented on bottom and a production test will be made this week. This is the sixth producing horizon for the field as other wells are producing from 5,400-, 5,500-, 5,600- and 5,700-foot levels. One-half mile east of production, Magnolia Petroleum Corp. No. 4 Lander, in the J. E. Galban Survey, cored salt water sand at 6,250 feet, total depth, plugged back and perforated casing at 5,495-5,500 feet, and it is flowing pipe line oil through a seven-sixty-fourths inch choke, although the gas oil ratio is very high. Wells in this area have been productive from the 5,700-foot sand and apparently the well is down dip from the high part of the structure. The 5,700-foot pay in the north extension area was extended several hundred feet south toward the field proper by Normandie Oil Co. No. 9 Cook, which has cemented 7-inch casing at 5,735 feet following a drill-stem test that showed several hundred feet of pipe line oil.

The first "twin well" to be completed in the field is Blanco Oil Co. No. 2 Dunwoody, offsetting a 5,400-foot producer. Following a cement squeeze job at 5,594-5,600 feet, the cement was drilled out to 5,601 feet and the well completed for an initial production of 96 bbls. per day through a three-sixteenths inch choke, with tubing pressure of 900 pounds and casing pressure 2,100 pounds. Other completions were reported by George Echols and Humble Oil & Refining Co.

Among wildcat activities in this particular area of the Lower Gulf Coast, additional showings in a wildcat in Victoria and Refugio counties were holding attention. Southeast of Telfener, in the Thomas C. Burnham Survey, W. V. Bolwes No. 1 Robertson was drilling below 5,700 feet after additional showings were found at 5,641-43 feet. A drill-stem test with a well packer failed. Sand with an odor of oil and gas was cored from 5,132-35 feet. Two Schlumberger surveys have been made and no doubt a production test will be made after the hole is carried to the desired depth.

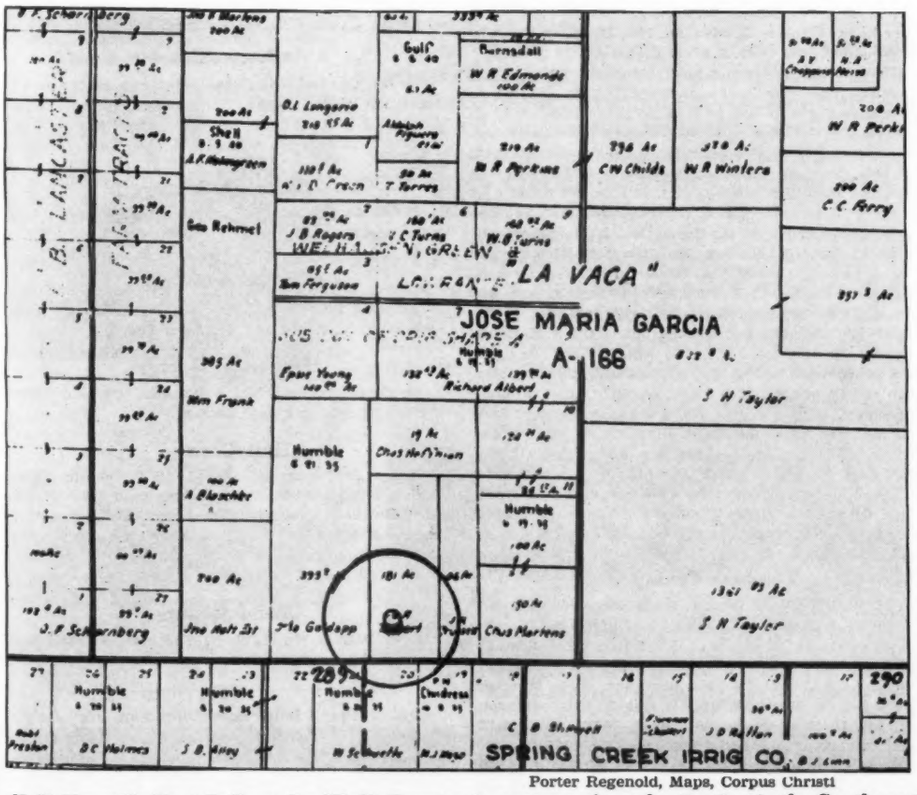
In Refugio County, Hogan Oil Co. No. 1 Kelly, located in the M. & A. Roache Survey, is coring sandy shale after sand with a gas odor was cored at intervals from 5,727-72 feet.

Wildcatting in Rio Grande Area

In the Lower Rio Grande Valley area, operators were watching the rapidly spreading wildcat play extending through Kleberg, Kennedy, Hidalgo and Willacy counties, following a period of considerable geophysical activity by major and independent companies. Magnolia Petroleum Co. is preparing to spud No. 1 Antonio Dietz, a projected 7,500-foot test in Kleberg County, about 8 miles northeast of Riveria Beach, in Lot 4, section 7, of the Gabriel Trevino Survey. This test is located in the vicinity of Superior Oil Co. No. 1 Koch, recently spudded on a geophysical prospect and which is now drilling below 4,500 feet.

In Hidalgo County, Magnolia Petroleum Co. is reported to have filed leases covering practically all townsite lots of Hargill in the northeastern part of the county.

(Continued on Page 85)



Porter Regenold, Maps, Corpus Christi

H. H. Howell's No. 1 Talbert, Jim Wells County, has attracted much attention in the Southwest Texas district

East and East Central Texas

By MITCHELL TUCKER

OPEN WOODBINE SAND POOL; EAST TEXAS 24-HOUR SHUT-IN

DALLAS, Tex., Nov. 22.—Principal interest in eastern Texas last week rested in the four-Sunday shutdown ordered for the giant East Texas field. Some vigorous protests against this action of the Texas Railroad Commission has been voiced, and the possibility of a court suit to test the validity of the order has been rumored. However, the initial shutdown was carried out because no injunctions were granted five days prior to the effective date. Five crews of engineers with bomb trucks were used to make the bottom-hole pressure tests while the withdrawal of fluid from the reservoir was halted for 24 hours. Each of the former 100 or more key wells will be tested eight times during the shut-down period.

Discovery Near Toole

After a long and diligent search for Woodbine production along the Balcones Fault system in northwestern Henderson County, north of the trend of other Woodbine Fault line fields, a new field opener appeared probable last week. Fred Haynes No. 1 A. R. Dillard, in the H. Jeffries Survey, near the town of Toole, was originally drilled to a depth of 6,518 feet, and finding deeper horizons barren, was plugged back for a thorough test of the Woodbine. Casing was perforated opposite the Woodbine at 3,093-3,103 feet, and after preliminary testing, flowed a 24-hour Railroad Commission gauge of 127 bbls. through three-sixteenths inch choke, tubing pressure 100 pounds, 40-gravity oil. Several nearby wells have formerly tested the Woodbine sand with negative results, and although some skeptical observers discount possibilities of an extensive field here, the fact remains that another fault line field of some size in the Woodbine has been opened in northwestern Henderson County.

Opelika Gasser

It now appears as if the Seaboard-Tide Water-Humble No. 2 McElreath and Suggett, deep test at Opelika in Henderson County, will be completed as a gasser. After drilling to a total depth of 9,260 feet and plugging back for tests of upper levels, casing has again been perforated from 8,759-8,890 feet with 60 shots. At a plugged back depth of 8,890 feet, tubing was lowered to 8,860 feet, and after washing for three hours the well began cleaning itself through seven-eighths inch tubing choke. Pressure built up to 1,150 pounds on casing and 900 pounds on tubing after 24 hours. No actual gauge of possible gas volume is available, but it is reported that the gauge is relatively small. No distillate is showing in the gas as yet.

Gregg County Prospect

In the deep Gregg County prospect southeast of Longview and the East Texas field, Gulf and Humble No. 1 Robertson is taking drill stem test at a total depth of 7,358 feet in sandy lime. On a core from 7,326-46 feet a gas odor with oil pinpoints was reported. Operators expect to penetrate the top of the Travis Peak soon.

Cayuga Experiment

The Texas Railroad Commission has granted permission to conduct repressuring experiments in the Woodbine sand in the Cayuga field, in Henderson and Anderson counties, main oil-producing zone in that field. One experimental unit will be built in the plant, taking gas from the lower Trinity gas-producing zone, stripping it of its natural gasoline, and introducing the residue back into the Woodbine. Success of the experiment may result in the construction of a new gasoline plant at Cayuga, which has long been delayed because of a disposal point for the residue gas.

Talco Field

Five new locations were announced in the Talco field, Titus and Franklin counties, bringing activity there to 7 rigs and 24 drilling wells. There are two drilling wells at Sulphur Bluff. Recent completions in the western sector of the Talco pool, eastern Franklin County, have all reported favorable thicknesses of saturated Paluxy and high prices are being paid for non-proven acreage in this direction, which area seems in line for active drilling soon.

Wildcat Location

One new wildcat location was announced in eastern Texas last week. In Angelina County, Charles E. Parrott is preparing to drill a wildcat test on the J. C. Burris farm in the W. Plucker Survey, 2½ miles west of Huntington, Tex.

Abandonments

E. H. Moore, Inc., No. 1 Chronister Lumber Co., wildcat test in Cherokee County, 3 miles northeast of Wells, has been abandoned as dry, total depth 3,525 feet.

J. K. Wadley No. 1 W. R. Thornton, closely watched Woodbine test 3 miles southwest of Gracetown in the P. Maulding Survey, north of the East Texas field, cored the Woodbine from 3,762-74 feet and found it dry. The hole was deepened to 3,890 feet and abandoned. Location is about 1½ miles northwest of the A. Baggett No. 1 Rash, a lone producer in the area.

EAST TEXAS FIELD COMPLETIONS

Gregg County

Amerada Petroleum Co. No. 7 McPherson, 3,563-67 feet, flowed 47 bbls. per hour. Atlantic Refining Co. No. 25 Duncan, 3,636-3,753 feet, 80 bbls. per hour. Atlantic-Sun No. 17 Anderson, 3,496-3,535 feet, 20 bbls. per hour. A. P. Carr No. 2-B G. W. Richey, 3,531 feet, 60 bbls. per hour. Clark & Cowden No. 11-A Christian, 3,646-56 feet, 80 bbls. per hour. F. H. E. Oil Co. No. 11 J. Barnes, 3,628-60 feet, 82 bbls. per hour; No. 11 Barnes, 3,628-60 feet, 63 bbls. per hour. Gilcrease Oil Co. No. 10 A. Christian, 3,538-75 feet, 98 bbls. per hour. Sinclair Prairie No. 19 M. Lawson, 3,505-20 feet, 60 bbls. per hour. Stanolind No. 13 Andrean McCrory, 3,479-3,525 feet, 61 bbls. per hour. Stanolind-Continental and Tide Water No. 28-C Flewellen, 3,606-43 feet, 46 bbls. per hour.

Sun Oil Co. No. 16 J. C. Gray, 3,605-58 feet, pumped 2 bbls. per hour. W. A. Brown No. 2 Cheeseborough, 3,530-51 feet, 60 bbls. per hour. Everette Drilling Co. No. 3 Barton, 3,544-92 feet, 50 bbls. per hour. General Crude Oil Co. No. 11 Howard, 3,614-19 feet, 62 bbls. per hour. E. P. Halliburton No. 12-B W. D. Lacey, 3,599-3,600 feet, 30 bbls. per hour. Humble Oil & Refining Co. No. 26 Knowles, 3,533-3,604 feet, 50 bbls. per hour; No. 28 Knowles, 3,557-3,621 feet, 50 bbls. per hour. Johnson and Owens No. 11-B State, 3,498-3,514 feet, 20 bbls. per hour. J. S. Rushing No. 4 Dickson, 3,576-87 feet, 50 bbls. per hour. Sultana Drilling Co. No. 2-A Sabine River, 3,538-46 feet, 40 bbls. per hour. Sun Oil Co. No. 55 Cole, 3,517-70 feet, 50 bbls. per hour; No. 32 Hilburn-Lloyd, 3,677-78 feet, 62 bbls. per hour. Trentman Oil Co. No. 10 M. Thomas, 3,725-26 feet, 96 bbls. per hour. Wellington No. 3-C Dodson, 3,626-29 feet, 80 bbls. per hour.

Rusk County

E. W. Barr No. 3 Barker, 3,718-19 feet, 60 bbls. per hour. F. Demago No. 2 Wells, 3,665-66 feet, 40 bbls. per hour. National Petroleum Co. No. 8 Henderson, 3,564-98 feet, 4 bbls. per hour pumping. Ward Oil Co. No. 11 Beall, 3,710-11 feet, 33 bbls. per hour. J. B. Wrather No. 2-B G. H. Morris, 3,704-04½ feet, 20 bbls. per hour. Atlantic Refining Co. No. 46 Kinney, 3,572-3,629 feet, 32 bbls. per hour; No. 14-C Pinkston, 3,585-3,666 feet, 36 bbls. per hour. East Shore Oil Co. No. 10 Fox, 3,675-82 feet, 80 bbls. per hour. Gulf Production Co. No. 9-D Mayfield, 3,629-39 feet, 40 bbls. per hour. Humble Oil & Refining Co. No. 9 Glover, 3,658-3,729 feet, 60 bbls. per hour. Hunt Oil Co. No. 9 Finney, 3,618-3,706 feet, 15 bbls. per hour. McDonald & Campbell No. 6 Wheeles, 3,755-80 feet, 60 bbls. per hour. Ohio Oil Co. No. 4 Weaver, 3,615-21 feet, 56 bbls. per hour. A. V. Riley No. 4 Durbo, 3,662-74 feet, 2 bbls. hourly pumping. Royal Petroleum Co. No. 10 Goforth, 3,770-71 feet, 33 bbls. per hour. J. B. Sneed No. 4 Gassett, 3,674-76 feet, 60 bbls. per hour; No. 2-A Rollins, derrick abandoned. Sonbar Oil Co. No. 16 Finney, 3,634-62 feet, 45 bbls. per hour. Stanolind-Pure No. 5 Lacey, 3,605-24 feet, 24 bbls. in seven hours by pumping. Sun Oil Co. No. 12 Selman, 3,655-3,701 feet, 25 bbls. per hour. Tex-Jersey Oil Co. No. 4 Eaton, 3,746-52 feet, 20 bbls. per hour. Tide Water No. 23 Pinkston, 3,770-85 feet, 48 bbls. per hour. Ward Oil Co. No. 5 Cox, 3,650-85 feet, 30 bbls. per hour.

Smith County

Sinclair Prairie No. 30 Wright, 3,751-52 feet, 40 bbls. per hour.

Upshur County

Ruthledge and Boller No. 19 J. M. Todd, 3,747-49 feet, 10 bbls. per hour pumping; No. 20 Todd, 3,685-89 feet, 10 bbls. per hour pumping. E. P. Halliburton No. 11-C A. R. Loaden, 3,636-41 feet, 60 bbls. per hour. Humble Oil & Refining Co. No. 11 Edwards, 3,602-14 feet, 48 bbls. per hour; No. 35 Edwards, 3,664 feet, 60 bbls. per hour. Kesson Oil Co. No. 4 Mockey, 3,663-65 feet, 20 bbls. in three hours pumping. Magnolia Petroleum Co. No. 29 Hampton, 3,656-77 feet, 60 bbls. per hour. W. L. Peckens No. 11 T. Wells, 3,717-20 feet, 60 bbls. per hour. Stanolind No. 5 Cloud, 3,672-75 feet, 20 bbls. per hour. S. E. Watts No. 21 O'Byrne, 3,789-3,803 feet, 42 bbls. per hour.

EAST CENTRAL TEXAS COMPLETIONS

Anderson County

In the Cayuga field Tide Water and Seaboard No. 3-A L. E. Haton, flowed 75 bbls. per day from sands 3,992-4,003 feet and 4,056-76 feet. Their No. 5 V. C. Wortham, same field, flowed 124 bbls. daily, 4,030-81 feet.

Cherokee County

E. H. Moore, Inc., No. 1 Chronister Lumber Co., 3 miles northeast of Wells, dry and abandoned, depth 5,925 feet.

Freestone County

Amerada Petroleum Corp. No. 2 Beck, Cayuga field, 4,009-26 feet, flowed 165 bbls. per day.

Henderson County

Sanders-Murchison No. 2 Watkins, Cayuga, 4,103-12 feet, 62 bbls. per day flowing.

Titus County

Lucey Petroleum Co. No. 11 Williams, in Talco field, pumped 392 bbls. daily, Paluxy sand 4,244-83 feet. Scott Brothers have abandoned derrick for proposed drilling of No. 1-E Edwards. G. M. W. have abandoned No. 2-25, Talco townsite, at a total depth of 160 feet, after decision was reached to not drill the location.

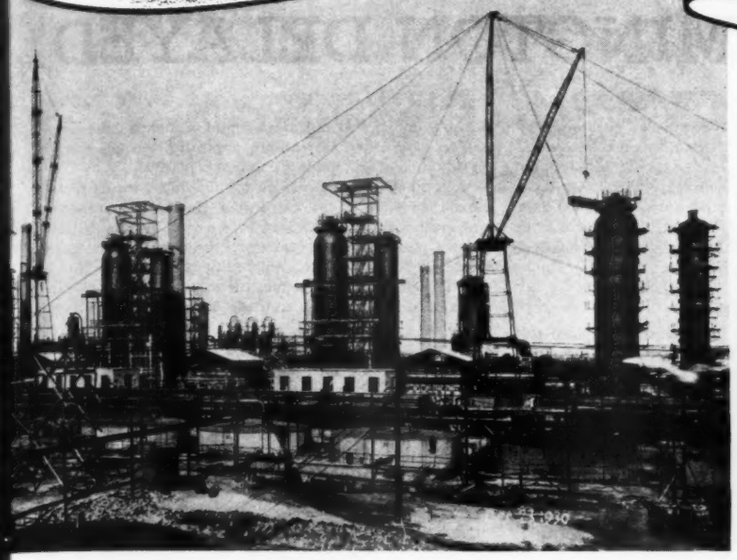
Upshur County

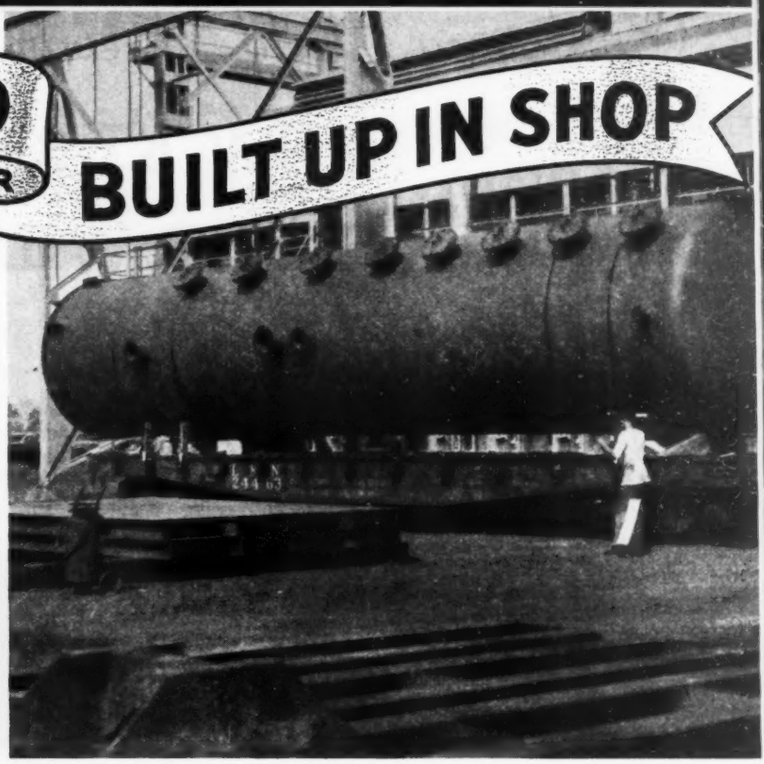
J. K. Wadley No. 1 W. R. Thornton, P. Maulding Survey, total depth 3,890 feet, dry and abandoned.

Paul Elliott, field superintendent for Ralph G. Trippett of Shreveport, La., has been transferred to Abilene, Tex., to take over supervision of production and development of the 313 acres in the Guitar pool which was recently acquired by the Trippett interests.

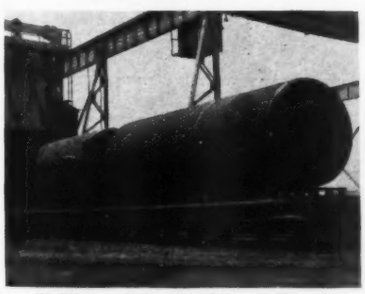
STEEL PLATEWORK AND TANKS

ERECTED IN FIELD OR BUILT UP IN SHOP





Riveted Refinery Vessel



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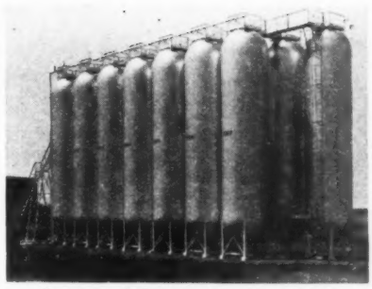
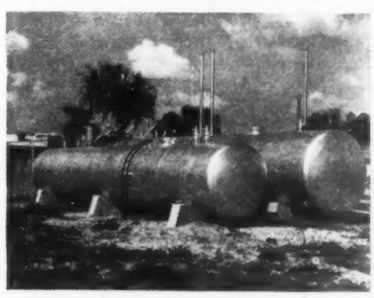
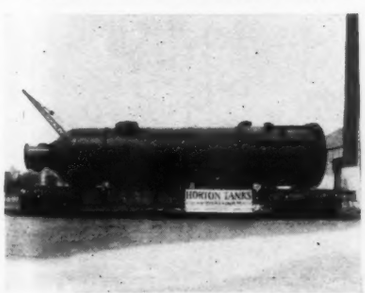


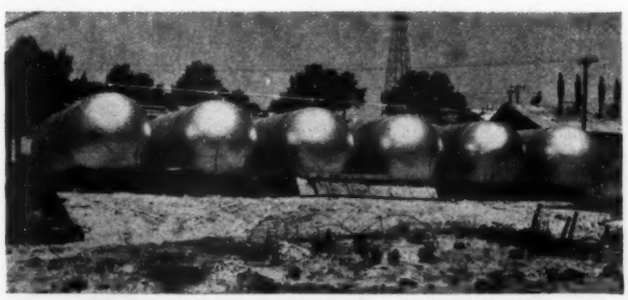
Butane and Propane Pressure Tanks



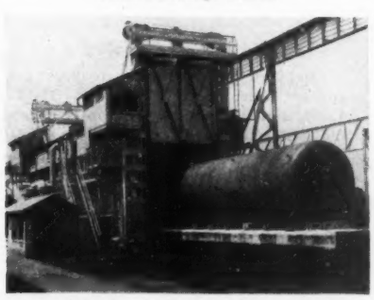
Butane Storage Tanks



Fractionating Tower



A Battery of Pressure Tanks for Natural Gasoline Storage



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Houston	2919 Main Street	Detroit	1514 Lafayette Building	Boston	1517 Consolidated Gas Building
Tulsa	1606 Hunt Bldg.	Cleveland	2204 Rockefeller Building	San Francisco	1054 Rialto Building
Birmingham	1536 North Fiftieth Street	New York	3347-165 Broadway Building	Los Angeles	1423 Wm. Fox Building

FABRICATING PLANTS in Birmingham, Chicago, and Greenville, Pa.

California Field Report

By
L. P. STOCKMAN

NEW KERN COUNTY POOL IN SIGHT; WILMINGTON DELAYED

LOS ANGELES, Calif., Nov. 22.—Ohio Oil Co. is completing No. 3-E Kern County Land in the Strand district of Kern County, 2 miles northwest of the Ten Section field, and indications point to the discovery of an oil field. No. 3-E in section 14-30-25 is bottomed at 8,175 feet, and has 7-inch water string cemented at 8,095 feet. This wildcat on a formation test two weeks ago indicated a potential daily production of 2,500 bbls. of light crude oil along with considerable natural gas and would have resulted in considerable leasing if there had been available acreage. Shell Oil Co. and Ohio Oil Co. appear to control the greatest part of the potentially productive land, although Standard Oil Co., with an 80-acre lease within 1,500 feet of Ohio's discovery well should also participate in future development. Shell Oil Co., which drilled a deep test in NW section 14-30-25, has staked a direct north offset, No. 72-14-A Kern County Land, and plans call for immediate drilling. The new pool appears to be defined to the northwest and to the southeast by dry holes drilled by Shell Oil Co., Ohio Oil Co. and Standard Oil Co. and based on productive contours is a separate accumulation from the Ten Section field discovered by Shell Oil Co. last year.

Rio Bravo Will Be Busy

That the Rio Bravo field of Kern County is faced with an aggressive development campaign is evidenced by the fact that Superior Oil Co. has already started work on an east line offset to Union Oil Co.'s discovery well and the latter has started grading for a second well to be drilled northwest of the initial completion. Superior Oil Co.'s test will be No. 1 Wagner, section 35-28-25. Union's second well in the Rio Bravo field will be No. 2-34 Kern County Land, 660 feet north and 660 feet west of the discovery well. Production is developed at approximately 11,300 feet, so these two new wells will not be completed until early next year, perhaps in March. General Petroleum Corp., which holds the major portion of a full section which adjoins Union's Kernco lease on the south, has not announced any plans for development. Most of the acreage is held in large blocks and there is little likelihood of intensive drilling unless the field proves larger than expected. Operators held an organization meeting several days ago to discuss casing programs, well spacing, and the probability of unitizing drilling and production activities. While the matter has not yet been fully decided there does not seem to be much chance of unit operation although Union, Superior and General Petroleum Corp. have approved a spacing program limiting one well to each 20 acres. Due to the depth at which production is secured this plan may later be changed to one well to each 40 acres and wells staggered at alternate intervals.

Greeley

Standard Oil Co. has an excellent new well in the Greeley field, Kern County. No. 11-10 Kern County Land, section 17-29-26, was brought in flowing 3,450 bbls. of clean 29.8-gravity oil and 1,040,000 feet of natural gas per day from 7,800 feet. Top of the Greeley zone was logged at 7,747 feet and the well was finished flowing through a 1-inch bean under a pressure of 70 pounds on the tubing and 450 pounds on the casing. Same company's No. 1 Fleishauer, section 20-29-26, tested wet at 7,855 feet and the hole was plugged back to 7,760 feet and preparations made for an immediate production test. Superior Oil Co. has made 5,765 feet of hole in 11 days in No. 1 Krause in the eastern end of the Greeley field and at that rate should have the well ready for a production test within another 30 days.

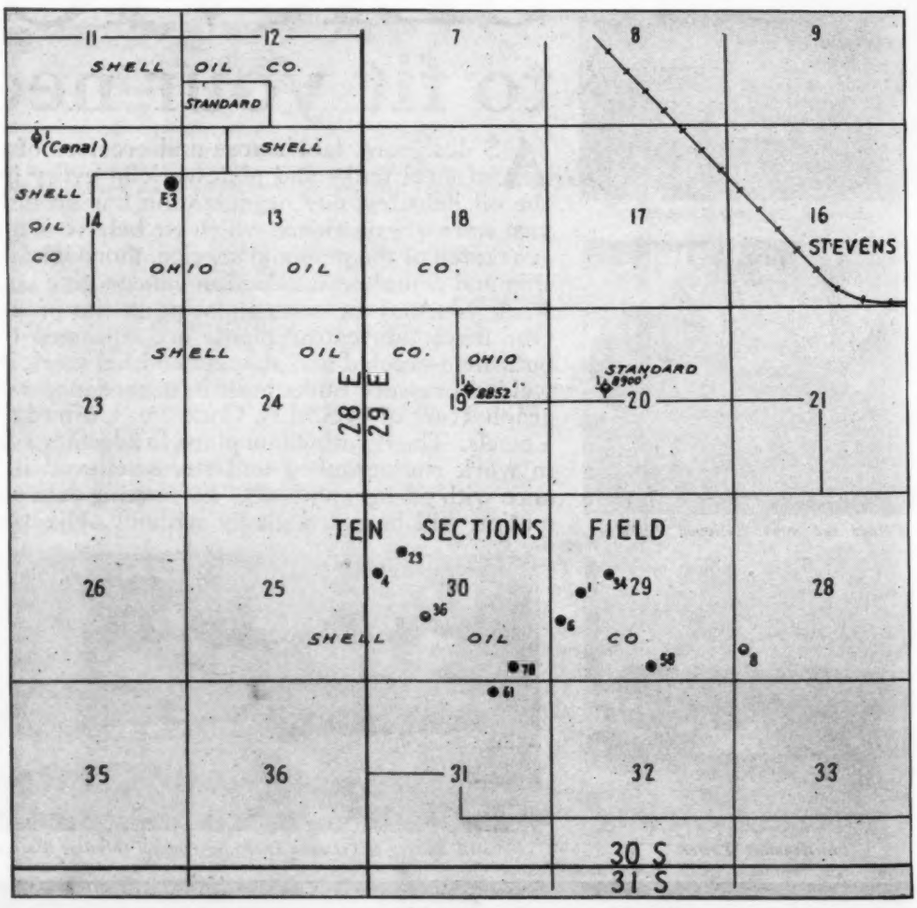
Superior Oil Co. has drilled out the cement in No. 5 Huffman, a deep test in the Kettleman North dome field, and has started coring ahead in search of the Avenal zone of Eocene age. If Superior develops substantial production Union Oil Co., Kenda and Standard Oil Co. will immediately initiate offset drilling. Up in the Wasco district of Kern County, Continental Oil Co. recovered the lost drill pipe down to 11,000 feet and has yet to recover 584 feet of it. In the Rosedale district of Kern County Continental is redrilling No. 1-B Kern County Land at 7,500 feet.

Wilmington

Although almost six months have elapsed since the electorate of Long Beach voted to lift drilling restrictions in the Long Beach Harbor section of the Wilmington field not one well has been started in the area in question. The Long Beach Harbor Commissioners delayed matters until November 11 and accepted a number of applications preparatory to issuing the necessary drilling permits but now find themselves unable to issue the permits due to the initiation of court action by J. E. Webb who has petitioned for a temporary restraining order to prevent the Harbor Commission from issuing any drilling permits until the title to tidelands has been decided. Operators will make a determined effort to force an early hearing if the court accedes to the petitioner's plea for a restraining order. It is customary in cases of this sort to set a date for the hearing about a month later and issue a temporary restraining order if the facts introduced at the preliminary hearing justify.

A total of 53 applications for drilling permits have been filed with the Long Beach Harbor Commission and a number of others will be filed in the immediate future. General Petroleum Corp. has filed 19 applications, Bankline Oil Co. nine, Superior Oil Co. nine, Union Pacific Railroad seven, Richfield Oil Corp. seven, Caminol Co. Ltd. one, and the Long Beach Harbor Co. one.

Union Pacific Railroad headed the Wilmington completion list in the past week by finishing three wells which showed an aggregate initial production of 1,248 bbls. These new wells were Nos. 60, 63 and 64 and they showed initials of 510 bbls., 348 bbls. and 390 bbls. per day respectively. No. 60, a multiple zone completion, was brought in flowing from the Terminal zone with the Ranger zone production flowing to sump until it cleaned up. This new producer was bottomed at 3,479 feet and the oil which tests 18.3 degrees has a negligible cut. No. 63, bottomed at 3,359 feet, is producing clean 20.3-gravity oil under a tubing pressure of 150 pounds and a casing pressure of 540 pounds. No. 64, completed at 3,352 feet and finished with 426 feet of 6⅝-inch liner including 400 feet of



Ohio Oil Co.'s No. 3-E Kern County Land, northwest of the Ten Section field of Kern County, California, has all the earmarks of having discovered a new oil and gas field of primary importance

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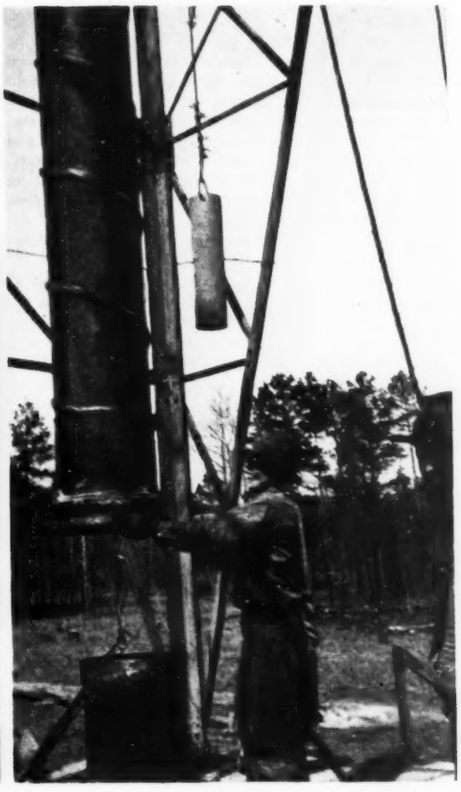

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perforated, is producing clean 21.6-gravity oil under a tubing pressure of 250 pounds and a casing pressure of 550 pounds. Macson Oil Co. No. 55-C-1 has been completed pumping 225 bbls. of clean 17.7-gravity oil per day from 3,643 feet and Bankline Oil Co. No. 8 D. H. C. has been completed pumping 102 bbls. of 17.6-gravity oil cutting 3 per cent daily from 3,452 feet. Royalty Service Corp. No. 2 Price has been completed flowing 230 bbls. of 16.5-gravity oil cutting 4 per cent daily from 3,590 feet through a 24/64-inch bean under a tubing pressure of 220 pounds and a casing pressure of 440 pounds. Pacific Western Oil Co. No. 1 Ronan, a deep test in the town lot area, is rotating ahead at 5,648 feet and while some small indications have been logged from time to time none of the several formation tests made to date have been favorable.

Lost Hills-Belridge

Standard Oil Co. completed another well out on the west front of the Lost Hills structure and should have a second well tanking oil within another few days. Standard's No. 6 United in section 2-26-20 was completed, pumping 225 bbls. of 13.8-gravity oil and 206 bbls. of water and sand per day from 1,592 feet. No. 7 United had top of the pay at 1,278 feet and an 8⅝-inch water string was cemented at 1,270 feet. Tide Water Associated Oil Co. is cleaning out No. 10-E-3 Williamson at 2,067 feet preparatory to deepening.

In the North Belridge field, Belridge Oil Co. is making preparations to complete No. 43 in section 26-27-20, bottomed in pay at 8,415 feet with a 9⅝-inch water string landed at 8,100 feet. Completion of No. 1 Martin of the Texas Co. a month or so ago stimulated interest in the northwest end of the North Belridge field and several wells have been started. The Texas Co. has started drilling No. 2 Martin and this lease is being offset by Tide Water Associated Oil Co. and the Belridge Oil Co. Richfield Oil Corp. has started drilling operations on a well in section 22-27-20 and Tide Water Associated is rigging up No. 21-2 and has derrick up for No. 21-3 in section 21-27-20.

Mount Poso

The Mount Poso field of Kern County reflecting the discovery of two new accumulations north of the northern tip of the original productive area is showing greatly increased activity. This activity is due to drilling operations of Ring Oil Co., Sunset Oil Co., D. G. Vedder and Vedder Petroleum Corp. which have kept several strings of tools in operation for the past 30 days. Ring Oil Co. completed No. 29-5 Bowles in section 29-26-28 pumping 385 bbls. of relatively clean 15.6-gravity oil daily from 1,760 feet. This company recently completed No. 2 Louden and No. 3 Bohen and should have No. 3 Shapiro tanking oil within a fortnight. Sunset Oil Co. is believed to have proved up another small productive area in this locality as its No. 1 S.P.L. in section 3-27-28 has been completed pumping 96 bbls. of clean 15.8-gravity oil per day from 1,461 feet. Top of the productive Vedder was logged at 1,435 feet and the hole was finished with 50 feet of 7-inch liner including 20 feet of 120-mesh screen. Sunset made location for a second test. Hobbee Oil Co. completed No. 3 in the McVan section of the Mount Poso field in section 14-27-27, pumping 61 bbls. of 13.8-gravity oil cutting 4 per cent daily from 1,185 feet. No. 12 Vedder of the Texas Co. and No. 4 B.N.B. of D. G. Vedder are being prepared for immediate production tests and should be finished on the beam in another few days. In the Premier section of the Mount Poso field, Pebble Beach Oil Co. has landed an 8⅝-inch water string in No. 5 Newhope at 2,444 feet preparatory to making an early production test from 2,621 feet.

Round Mountain

In the Round Mountain field of Kern County, California Western Oil Co. completed No. 7 in section 12-28-28, pumping 410 bbls. of 16.1-gravity oil per day from 1,860 feet after finishing the hole with 51 feet of 6⅝-inch liner including 35 feet of 80-mesh screen. The company's No. 8 picked up the top of the productive Vedder zone at 1,909 feet and should result in a commercial producer. Eastmont Oil Co., which discovered commercial production about 1 mile east of the original Round Mountain field a few months ago, has a rig up for No. 5 and is going ahead in No. 6 Olcese at 1,800 feet. Two new wells are nearing completion in the Round Mountain field, Shell Oil Co. No. 16 Freeman in section 20-28-29 and D. G. Vedder No. 1 Bell in section 12-28-28. Fremont Oil Co. No. 2 Olcese in section 35-28-29 may also be ready for a production test as this hole is down 1,650 feet at the present time.

Midway-Sunset

In the Midway-Sunset field of Kern County Standard Oil Co. completed No. 19 Monarch in section 26-12-24 pumping 115 bbls. of 22.2-gravity oil from 2,700 feet after the hole had been finished with 211 feet of 6⅝-inch liner including 167 feet of 60-mesh screen while its No. 2-25-L in section 25-12-24 was completed pumping 43 bbls. of 27.3-gravity oil and 13 bbls. of water per day from 3,012 feet. Richfield Oil Corp. No. 14 Fellows in section 6-32-23 completed at 1,150 feet, showed an initial daily production of 103 bbls. of 21.5-gravity oil, cutting 6 per cent on the beam. This producer was finished with 152 feet of 7-inch liner including 124 feet of perforated and 60 feet of 5½-inch including 58 feet of perforated. Brookshire Oil Co. No. 3 in section 24-31-23 has been completed, pumping 62 bbls. of 18.4-gravity oil cutting 10 per cent after the hole had been carried down to 2,524 feet and then plugged back to 2,440 feet.

Fruitvale

Western Gulf Oil Co. completed an excellent producer in the Fruitvale pool of Kern County during the early part of the current week when No. 10 Red Rib-

(Continued on Page 104)

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	November 11 Total this week	November 11 Daily average	November 4 Total last week	November 4 Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Crude oil	.....	.....	.....	.....	129,788	.....
Diesel and gas oil	.....	.....	.....	.....	176,726	151,541
Gasoline	.....	.....	.....	.....	3,666,922	5,375,252
Kerosene	.....	.....	.....	.....	328,907	1,128,397
Foreign exports:						
Crude oil	341,041	48,720	323,555	46,222	13,650,701	8,185,318
Fuel oil	177,300	25,329	229,555	32,794	12,484,415	9,209,410
Diesel and gas oil	185,913	26,559	232,730	33,247	6,819,416	5,001,000
Gasoline	243,942	34,849	23,780	3,397	6,917,675	6,675,218
Kerosene	35,950	5,136	.....	.....	2,003,872	1,346,882
Lubricants	.....	.....	.....	.....	12,984	.....
Other unfinished oil	.....	.....	.....	.....	974,785	155,253
Coastwise-domestic:						
Crude oil	164,805	23,544	79,045	11,292	4,972,427	6,289,200
Fuel oil	303,056	43,294	433,724	61,961	13,731,492	9,333,329
Diesel and gas oil	31,214	4,445	62,090	8,870	1,999,560	1,037,093
Gasoline	408,215	58,316	285,808	40,830	13,851,515	10,919,723
Kerosene	.....	.....	16,127	2,304	368,080	159,088

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	222,330	142,472
Gasoline	.....	.....	.....	.....	25,778	285,959
Kerosene	.....	.....	.....	.....	72,750	.....
Asphalt	.....	.....	.....	.....	413,885	327,418
Lubricants	.....	.....	.....	.....	25,522	43,543
Foreign exports:						
Crude oil	64,908	9,273	.....	.....	2,896,582	2,859,871
Fuel oil	28,523	4,075	31,476	4,497	1,818,155	2,305,733
Diesel and gas oil	74,042	10,577	.....	.....	2,667,830	1,727,450
Gasoline	365,463	52,209	.....	.....	4,911,365	3,385,008
Kerosene	28,712	4,102	.....	.....	851,871	571,023
Lubricants	.....	.....	.....	.....	474,494	323,140
Other unfinished oil	.....	.....	.....	.....	.....	90,923
Coastwise-domestic:						
Fuel oil	118,940	16,991	64,960	9,280	5,583,260	5,788,316
Diesel and gas oil	59,418	8,488	26,779	3,826	1,292,698	615,988
Gasoline	96,175	13,739	258,851	36,979	4,974,549	4,512,224
Kerosene	30,152	4,307	18,236	2,605	368,326	203,744

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$ .80	$ .79	$ .74	$ .78	$ .79	$ .80	$ .76	.....	.....	.....	$ .80	$ .76	$ .76	$ .77	$ .78	.....	.....	$ .70	$ .70	$ .70	.....	.....	$ .70	.....
15-15.9	.80	.79	.74	.78	.79	.80	.76	.....	.....	.....	.80	.76	.76	.77	.78	.....	.....	.70	.70	.70	.....	.....	.70	.....
16-16.9	.80	.79	.74	.78	.79	.80	.76	.....	.....	.....	.80	.76	.76	.77	.78	.....	.....	.70	.70	.70	.....	.....	.70	$ .70
17-17.9	.80	.79	.74	.78	.81	.80	.76	.....	.....	.....	.80	.76	.76	.77	.78	.....	.....	.70	.70	.70	.....	.....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	.....	.....	.....	.82	.76	.76	.77	.78	.....	.....	.70	.70	.70	.....	.....	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	.....	.....	.....	.85	.76	.78	.77	.78	.....	$ .70	.74	.74	.71	$ .70	.....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	.....	.....	.....	.88	.78	.82	.77	.80	.....	.70	.78	.78	.72	.70	.....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	.....	.....	.....	.91	.80	.85	.77	.84	$ .78	.73	.82	.82	.74	.70	.....	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	.....	.....	.....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	.....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$ .84	$ .79	.....	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	.....	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	.....	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	.....	1.02	.95	.....	.89	.99	.86	.88	1.01	.98	.90	.83	.....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	.....	1.05	.98	.....	.92	1.03	.90	.91	1.06	1.02	.....	.....	.....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	.....	1.10	1.03	.88	.....	.....	1.02	.....	.96	1.06	.95	.95	1.10	1.06	.....	.....	.....	.95	.....
28-28.9	1.14	1.10	.90	1.14	1.15	.....	1.14	1.07	.90	.....	.....	1.06	.....	.99	1.10	.99	.99	1.15	1.10	.....	.....	.....	.97	.....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	.....	.....	1.09	.....	1.03	1.14	1.03	1.02	1.20	1.14	.....	.....	.....	.99	.....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	.....	.....	.....	1.07	1.17	1.08	1.06	1.25	1.18	.....	.....	.....	1.01	.....
31-31.9	.....	.....	.....	.....	1.24	Pipe	1.24	1.22	.97	Ship	.....	.....	.....	1.11	1.21	1.12	1.09	1.29	.....	.....	.....	.....	.....	.....
32-32.9	.....	.....	.....	.....	1.27	Line	1.27	1.27	1.00	.....	.....	.....	.....	1.14	1.25	1.16	1.13	1.34	.....	.....	.....	.....	.....	.....
33-33.9	.....	.....	.....	.....	.....	.....	.....	1.32	.....	$ 1.28	.....	.....	.....	1.18	1.28	1.20	1.17	1.38	.....	.....	.....	$ 1.19	.....	.....
34-34.9	.....	.....	.....	.....	.....	.....	.....	1.37	.....	1.32	.....	.....	.....	1.22	1.32	1.25	1.20	.....	.....	.....	.....	1.23	.....	.....
35-35.9	.....	.....	.....	.....	.....	.....	.....	1.42	.....	1.35	.....	.....	.....	1.25	.....	1.29	.....	.....	.....	.....	.....	1.27	.....	.....
36-36.9	.....	.....	.....	.....	.....	.....	.....	1.46	.....	1.39	.....	.....	.....	1.29	.....	1.33	.....	.....	.....	.....	.....	1.31	.....	.....
37-37.9	.....	.....	.....	.....	.....	.....	.....	1.51	.....	1.43	.....	.....	.....	1.32	.....	1.37	.....	.....	.....	.....	.....	1.35	.....	.....
38-38.9	.....	.....	.....	.....	.....	.....	.....	1.56	.....	.....	.....	.....	.....	1.36	.....	1.42	.....	.....	.....	.....	.....	1.39	.....	.....
39-39.9	.....	.....	.....	.....	.....	.....	.....	1.61	.....	.....	.....	.....	.....	1.40	.....	.....	.....	.....	.....	.....	.....	1.43	.....	.....
40-40.9	.....	.....	.....	.....	.....	.....	.....	1.66	.....	.....	.....	.....	.....	1.43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

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Among Gulf Coast Drilling Contractors

New locations, which during the past few weeks have been falling off in the Texas Gulf Coast district, showed a large increase over preceding weeks as a total of 51 were reported. The majority of these were made by Stanolind Oil & Gas Co., which is starting a twin-well drilling program in the Hastings field. Of the 18 locations made in the field, nine were twin wells which will be drilled on the Pennock, Cannon and Drake leases. Proven fields receiving new activity included Anahuac, Turtle Bay, Silsbee Spindletop, Hardin, Orange, Segno, Boling, Louise, Magnet, Withers, Lockridge, Heyser, Dickinson, Friendswood and Tomball. Of the total number of locations, seven were wildcats, which is the largest number announced in the district in several weeks. These included National Standard Oil Corp. No. 1 W. T. Carter Brothers in the M. S. Womack Survey; H. J. Dearman No. 1 Geiseke in the Issac Bunker Survey of the Huffsmith area in Harris County; Texas Co. No. 1 Adrian Johnson, on the Hilje Prospect in the John Bognad Survey No. 78, Wharton County; Strake Petroleum Corp. No. 1 O. R. Strunk in the L. P. Jennings Survey, Wharton County, located near Lissie; Texas Co. No. 4 Freeport Sulphur Co. on the Bryan Mound dome in Brazoria County; Hubert Holt and others No. 1 W. W. Greer and others located on the Carlos dome in Grimes County and Glenn H. McCarthy No. 1 J. E. Broussard, which is located on the Cheek Prospect in the C. Hillebrand Survey, in Jefferson County.

Rowan Drilling Co. is moving in material for a deep wildcat for Strake Petroleum Corp. on the Lissie Prospect in Wharton County. The test is No. 1 Strunk, in the L. P. Jennings Survey. The same drilling company is drilling a second well at the Danbury dome in Brazoria County, where it recently opened shallow production with No. 1 Jameson. Drilling activity continues at the Venice dome in Plaquemines Parish for Tide Water Associated Oil Co. and at Fairbanks in Harris County for the Amerada Petroleum Corp. and Stanolind Oil & Gas Co.

As a result of the opening of prolific production last week on the southwest flank of the old Orange field in Orange County, several new locations are expected to be announced for that district within the near future. The discovery well, Tillery & Ryan No. 1 Chesson, drilled by Thompson Drilling Co., flowed 808 bbls. of pipe line oil per day through a quarter-inch choke from a total depth of 5,946 feet. The area is divided among several major and independent companies.

W. V. Bowles received a contract from The Texas Co. to drill a wildcat on the Hilje Prospect in Wharton County, and material is being moved in. This contractor is drilling below 5,700 feet on his No. 1 Robertson, a wildcat near Telfener in Victoria County, which has attracted much attention due to several showings of oil and gas.

Loffland Brothers have apparently opened production for themselves in the South Jennings field in Jefferson Davis Parish with the drilling of No. 1 Fontenot. On an 11-minute drill stem test through perforated casing at 8,870-75 feet it showed 95 pounds of pressure, 20 stands of 38-gravity oil, 10 stands of oil and mud and 3 stands of salt water. The perforations will apparently be "squeezed off" in an attempt to shut off the salt water. If productive this will be the first oil production to be developed in the field.

Glenn H. McCarthy is drilling plug preparatory to drilling Sun Oil Co. No. 1 Bay Shore Farms deeper from a total depth of 11,327 feet, which has set a depth record for the Texas Coast. Seven-inch protection string of casing was set at 11,300 feet. He has abandoned Lee Brothers No. 1 Wilson at 7,012 feet and the rig is being moved to the Cheek Prospect, where he will drill his No. 1 Broussard, a wildcat test in Jefferson County.

Two drilling crews taken on location at Superior Oil Producing Co. No. 1 State which is located about 1½ miles offshore from Cameron Parish in the Gulf of Mexico. A 10-mile boat ride is required to reach the rig. Standing: D. H. Byrd, Jack Riley, L. P. Percy, H. P. Litchte, Jr., K. F. Streater, Frank Tinney, Bob Provost, A. M. Foster, L. H. O'Neal, Joe Bedford, Frank Sevens, Roy Percy, Bill Reich and Ted Houston

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Oklahoma Operations

By
DAL DALRYMPLE

JESSE AND LAFFOON SECTORS ARE EXTENDED NORTHWARD

The Jesse pool of southeastern Pontotoc County was extended to the northwest at Carter Oil Co. and Gulf Petroleum Corp. No. 2 Wells, SW SW NW section 2-1n-7, which flowed 299 bbls. of oil gross in eight hours after treating the Upper Hunton lime with acid. Tubing was to be pulled preparatory to acidizing again in the Lower Hunton. The upper pay was had at 3,837-4,000 feet, and the hole was bottomed at 4,115 feet.

South of the No. 2 Wells, Mid-Continent Petroleum Corp. No. 9 Statler, SW NW SW section 2-1n-7, also on the west edge of the area, had 1,500 feet of oil in the hole from Hunton lime at 3,770-4,030 feet, total depth.

The farthest east well in the Jesse pool, Choctaw Oil & Gas Co. No. 1 Meyers, C W half SW SE section 6-1n-8, in Coal County, flowed 400 bbls. of oil in two hours after acidizing both Upper and Lower Hunton lime, but was shut in when trouble with the separator developed.

Carter Oil Co. and others No. 1 Claytor, NE SW section 27-2n-9, wildcat in the Centrahoma area of Coal County, was drilling ahead at 6,446 feet in lime. Two feet of dry lime were recovered in a core at 6,433-38 feet.

The Laffoon area of Lincoln County was extended one-fourth mile north at Mid-Continent Petroleum Corp. No. 1 Vinson, section 4-13-16, which swabbed 17½ bbls. of oil in two hours from Wilcox sand at 4,234 feet.

The prospective pool opener in the Calvin area of Hughes County, Phillips Petroleum Co. No. 1 Beeker, NE NW SW section 8-5-10, was killing and mudding off Cromwell sand, where production was indicated, and was to drill ahead below 4,465 feet in quest of Wilcox sand production.

Pure Oil Co. purchased eight of 19 tracts of Indian land in Blaine and Canadian counties at the Cheyenne-Arapahoe Indian lease sale at the agency in Concho the past week. The Pure company paid $5.25 an acre for quarter-section leases in sections 29, 32 and 33-15-10w, Blaine County. Ohio Oil Co. bid $170 for W half NE section 19-15-10w, Blaine County, and $246.55 for 153.14 acres in N half SE and SE SE section 5-14-10w, Canadian County. Robert K. Norris paid $210 for NE section 20, same price for SE section 20, same price for SW section 32, all in 15-10w, Blaine County, and same price for NE section 5-14-10w, Canadian County. He also bought E half NE section 30, SW NE section 31, N half NE section 31, SE NE section 31 and NW section 32, all in 15-10w, Blaine County.

Wildcat Completion

Only one wildcat was completed in Oklahoma the past week, and it was a failure. Burke-Greis Oil Corp. No. 1 Rhea, SW SW SE section 14-10-9, east of the Olympic district, topped Cromwell sand at 3,275 feet. Hunton lime 3,872 feet, had a hole full of water at 3,895 feet, total depth, and was abandoned.

H. S. Brim and others No. 1 McKensie, SE NE NE section 13-18-3e, location for a wildcat in Payne County, was reported abandoned.

Pontotoc County

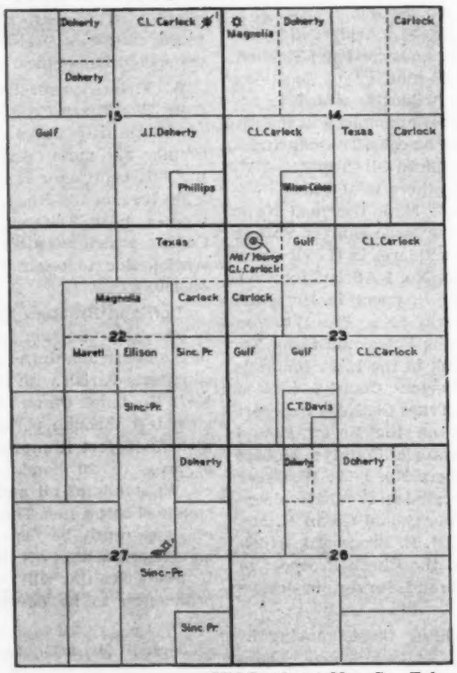
Carter Oil Co. and Gulf Petroleum Corp. No. 1 Wells, SE SE NW section 2-1n-7, Jesse area, Pontotoc County, found Hunton lime at 3,852 feet, Sylvan shale 4,127 feet, was bottomed at 4,128 feet, was acidized and had estimated production of 560 bbls. of oil daily.

Sinclair Prairie Oil Co. No. 1 Rogers, C W half NE SE section 1-1n-7, had Miesener sand at 3,892 feet, Hunton lime 3,898 feet, Sylvan shale 4,283 feet, total depth 4,288 feet, was acidized, flowed 275 bbls. of oil in two hours and earned potential rating of 930 bbls.

In the Fitts district, E. H. Moore completed No. 2 Brown, NW SW SW section 34-2n-7. Top of Hunton lime was 3,838 feet, total depth 4,143 feet. It was acidized, flowed 403 bbls. of oil gross in four hours, with 5,000,000 feet of gas and had potential rating of 626 bbls. of oil.

Same operator's No. 10-A Schauers, SE NW NW section 29-2n-7, twin well, had Cromwell sand at 2,530 feet, total depth 2,634 feet, perforated liner and flowed 55 bbls. of oil, accumulated, in 1½ hours on gas lift. It later flowed at the rate of 30 bbls. of oil daily.

E. H. Moore No. 3-A Schauers, NE SW NW section 29-2-7, twin well, found Cromwell sand at 2,470 feet



Mid-Continent Map Co., Tulsa

C. L. Carlock No. 1 Young, section 23-15-5e, was running casing in oil stained Wilcox sand at total depth of 4,486 feet, total depth. The wildcat is south of Kendrick, Lincoln County

and was bottomed at 2,698 feet. It flowed 38 bbls. of oil in 24 hours on gas lift.

Same operator's No. 8-A Schauers, NW SE NW section 29-2-7, was an abandoned location.

E. H. Moore No. 2 Waite, NW SW NE section 7-2-7, was completed as an input well at 2,462 feet, total depth, averaging 136 bbls. of water an hour. It topped Arbuckle lime at 2,170 feet. Sulfur water intruded at 1,615 feet and it was flowing sulfur water at 1,680 feet.

R. W. Simpson and Crusaders Petroleum, Inc., No. 1-B Woolley, NW SE section 28-2-7, had Cromwell sand at 2,327 feet, total depth 2,493 feet, and flowed 150 bbls. of oil through tubing in 24 hours. Gas gauged 4,000,000 feet.

Magnolia Petroleum Co. No. 15 Norris, SW SW SE section 21-2-7, flowed 90 bbls. of oil in 24 hours from Cromwell sand topped at 2,587 feet, total depth 2,622 feet.

In the Allen area, H. & M. Co. and W. A. Delaney No. 5 Harrel, SW NE SE section 29-5-8, pumped 40 bbls. of oil daily from sand at 825-35 feet, total depth 842 feet.

New work in Pontotoc County: Lake Oil Co. No. 1 Summers, SW NW NW section 25-5-4, location; H. W. Lee No. 1 Weatherly, NW SE NW section 24-1n-7, rig; J. F. Lloyd No. 2 Wesley, NW NE NW section 7-3n-7, cellar and pits; Sinclair Prairie Oil Co. No. 4 McCarty, NW NW NE section 22-2n-7, an old well, rigging up standard tools to plug back.

Carter Oil Co. and Gulf Petroleum Corp. No. 2 Wells, SW SW NW section 2-1n-7, Jesse area, perforated tubing on bottom, acidized with 2,000 gallons at 3,844-55 feet in Hunton lime and was awaiting results.

Crusaders Petroleum, Inc., No. 8 Morin, NW SW SE section 20-2n-7, Fitts district, was drilling below 3,438 feet. Continental Oil Co. No. 1 Thompson, C S half NW SW section 35-2n-7, was drilling below 2,420 feet. Magnolia Petroleum Co. No. 4 Statler, NE SE SW section 28-2n-7, set 7-inch casing at 4,352 feet, total depth 4,357 feet, and was waiting. Same company's No. 9 Woolley, SE cor. section 21-2n-7, was bottomed at 2,617 feet in Cromwell sand and flowed 39 bbls. of oil in 14 hours through casing, but was not a completion.

Seminole County

Sinclair Prairie Oil Co. No. 2 Rossanna, NW SW SW section 28-10-8, Rossanna area, Seminole County, topped Simpson Dolomite at 4,228 feet, Wilcox sand 4,257 feet, total depth 4,260 feet, was acidized with 5,000 and 8,000 gallons and swabbed 350 bbls. of oil net in 24 hours, from Dolomite.

Horney & Kennedy No. 1 Scroggins, SW NW NW section 33-7-6, Dora pool, had Boggy sand at 2,875 feet, total depth 2,985 feet, plugged back to 2,912 feet, swabbed 10 bbls. of oil in 15 hours, was shot again without result, and was completed as an 8-bbl. pumper.

Atlantic Refining Co. No. 1 Dameron, NE NE NW section 22-6-6, Konawa area, found Simpson Dolomite at 3,533 feet, was bottomed at 3,583 feet, flowed 851 bbls. of 41-gravity oil in five hours and 20 minutes through casing, later flowed 632 bbls. in eight hours through tubing and was completed for an allowable of 100 bbls. daily.

Manahan Oil Co. and E. H. Moore No. 2 Scroggins, NW NW SE section 22-6-6, had Boggy sand at 2,315 feet, total depth 2,328 feet, plugged back to 2,324 feet, was shot and swabbed 140 bbls. of 35-gravity oil and 10 bbls. of water in 18 hours.

W. C. McBride, Inc., No. 1 Collins, NE NW NW section 24-5-5, Wetley pool, had Hunton lime at 2,312 feet, Sylvan shale 2,487 feet, total depth 2,489 feet, was acidized and flowed 40 bbls. of oil net through tubing in 24 hours.

Jack Lynch and others No. 2 Burton, NW NE NW section 24-5-5, topped Hunton lime at 2,314 feet, total depth 2,509 feet, was acidized and flowed 25 bbls. of oil through tubing in 24 hours.

Winona and others No. 1-A Fish, SW NE NE section 19-7-8, topped first Cromwell sand at 3,117 feet, second sand 3,174 feet, had a hole full of water at 3,180 feet, total depth, and was abandoned. Same operators' No. 2 Fish, SW NW NE section 19-7-8, was an abandoned location.

Magnolia Petroleum Co. No. 1 fee, NW NW SE section 24-5-5, an old well, was deepened from 2,603 feet to 2,876 feet, plugged back to 2,870 feet, pumped 4 bbls. of oil in 24 hours and was recompleted.

Texas Co. No. 3 Lewis, NW SE NW section 13-5-7, an old well, was plugged back from 4,293 feet to 4,020 feet, acidized, pumped 70 bbls. of oil in 24 hours and was recompleted.

First reports of new activity in Seminole County: Atlantic Refining Co. No. 2 South Riddle, NW SW NE section 2-10-5, building rig; Amerada Petroleum Corp. and others No. 4 Klabzuba, SW SE SE section 35-11-5, building rig; H. V. Woodson & Marydun Oil Co. No. 1 Gilliland, SE SE SW section 24-11-7, set 10¾-inch casing at 60 feet, and was waiting on cement to set at

THE ONE PERFECT AND COMPLETE WAY TO CEMENT WELLS:

The W-K-M "Cosco" Casing Centralizer and Well Bore Cleaner

(1)

Fig. (1) Shows lining of mud on well bore smoothed out after cleaner has passed downward.

(2)

Fig. (2) Shows mud removed from well bore by upward movement of the cleaner, permitting a solid bond of cement between the casing and the formation.

(3)

Fig. (3) Shows how cement entered water sand and formed concrete, thus making a positive water shut-off.

(4)

Fig. (4) Shows casing centralized in the hole. Cement can be distributed evenly and entirely around casing.

Oil operators agree that cementing-off is probably the most important single operation in the successful completion of an oil well.

Poor cement jobs are a constant menace to the oil industry. Vast areas of productive oil sands are annually ruined through infiltration by water. One water well may easily ruin many oil wells.

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Oil operators are sure of these three facts: That the thick lining of mud on the well bore, that the channeling of cement, and that leaning casing, stand in their way—above everything else—to a positive shut-off.

The new COSCO Well Bore Cleaner and Casing Centralizer brings to you the solution of your cementing problems, enabling you to scrape the mud from the bore of the well, to stop channeling, to prevent leaning casing, and thereby to cement directly into the virgin formation itself.

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62 feet. Louisiana Refining Co. No. 6 Reed, NW NE NE section 18-5-8, an old well, was plugged back from 4,177 feet to 4,147 feet, shot Hunton lime topped at 3,760 feet, and flowed 90 bbls. of oil in 24 hours; Atlantic Refining Co. No. 2 Damron, NW NE NW section 22-6-6, had dug cellar and pits.

Oklahoma County

Two wells were completed in the Oklahoma City field, Oklahoma County, which has experienced somewhat of a revival of work in recent weeks as operators sought pay horizons above the Wilcox sand.

Gulf Production Co. of Oklahoma No. 1 Schuster, SW SW NE SW section 15-12-3w, had best pay at 6,372 feet, total depth 6,485 feet, was shot and acidized with 10,000 gallons, and flowed 2,846 bbls. of oil in the first 24 hours. Gas gauged 5,143,000 feet. It was completed, flowing at the rate of 500 bbls. of oil daily.

Clark & Co. No. 1 Lonsway, SW NE SW section 15-12-3w, had best pay in Simpson formation at 6,360 feet, was bottomed at 6,427 feet, and flowed 383 bbls. of oil through tubing in 24 hours, completed.

In the Britton area, Transwestern Oil Co. and others No. 1 Our Ladies Church, NW SE NE section 30-13-3w, had Simpson Dense at 6,588 feet, Dolomite 6,623 feet, total depth 6,783 feet, was shot and acidized and flowed as high as 63 bbls. of oil in seven hours. It was completed, flowing 50 bbls. of oil every other day through casing, cutting 30 to 70 per cent water.

In the Edmond field, Ohio Oil Co. No. 15 Dahl, Account 1, SE NE SE section 31-14-3w, found second Wilcox sand at 6,618 feet, total depth 6,710 feet, was shot and made potential of 477 bbls. of oil, with 2,000,000 feet of gas.

Stahl Petroleum Co. No. 1 Miller, SE NW SW section 15-12-3w, was a cellar. Clark & Co. was due to start work at a well one block south of the company's new No. 1 Lonsway producer, on west flank of the Dolomite play in the north end of the Oklahoma City field. Santa Fe Oil Co. No. 1 Slaughter, near Northeast 42nd Street and Oklahoma Avenue, Oklahoma City, was due to start, and Gulf Production Co. was digging pits at its No. 2 Schuster, Forty-first Street and Stiles Avenue.

Ohio Oil Co. No. 4 Messer, NE SW SW section 32-14-3w, Edmond field, flowed 55 bbls. of oil in 1½ hours and continued to swab below 4,500 feet, total depth 6,705 feet. Same company's No. 4 Rankin, SW SE SW section 31-14-3w, at total depth of 6,693 feet, had 2,500 feet of fluid in the hole, part oil, with 37 feet of cavings and was cleaning out.

Estimated Daily Production

Estimated daily production of Oklahoma for the week ending November 20 and for the preceding week was as follows:

	Nov. 20	Nov. 13
Allen	5,525	5,525
Billings	7,400	7,425
Burbank	7,925	7,900
South Burbank	14,225	14,200
Balance Osage	19,500	20,250
Blackwell district	4,750	5,025
Bristow-Slick	7,200	7,225
Chandler	2,850	2,875
Crescent	7,550	8,150
Cromwell	3,425	3,450
Cushing-Shamrock	10,800	11,125
Duncan district	3,950	3,975
Edmond	11,500	12,300
Fish	5,475	5,450
Fitts	80,850	79,425
Jesse	3,900	3,650
Graham	4,400	4,425
Gray	1,275	1,325
Healdton	10,025	10,100
Hewitt	4,325	4,350
Holdenville	850	875
Keokuk	7,925	7,150
Konawa	1,500	1,375
Lucien	13,650	13,975
Moore	9,400	9,750
Oklahoma City	148,900	114,050
Olympic	9,225	9,350
Polo	800	900
Sasakwa and townsite	2,525	2,475
Sholem-Alechem	2,975	3,000
Seminole:		
Bowlegs	10,975	11,025
Carr City	5,125	5,050
Earlsboro	5,925	6,150
South Earlsboro	650	700
East Earlsboro	6,800	6,975
Little River	9,250	9,375
East Little River	1,100	1,100
Maud	600	700
Mission	1,950	1,975
Seminole	9,350	9,200
East Seminole	2,150	2,075
Searight	3,900	4,000
Total Seminole	57,775	58,325
St. Louis-Pearson	19,400	19,575
Tatums	5,975	6,000
Tonkawa-Garber-Thomas	4,525	4,425
Wewoka	2,725	2,775
Yale-Jennings	4,075	4,200
Other pools	80,950	80,225
Total Oklahoma	590,025	556,575

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp. completed another sizeable producer in the Billings pool, Noble County, at No. 5 Hackett, NE NE SE section 21-23-2w. It had best pay in Wilcox sand at 1,306 feet, total depth 4,354 feet, flowed 1,037 bbls. of oil in 5½ hours while drilling in, and on potential test flowed 666 bbls. of oil in six hours. Potential rating was 2,661 bbls. Gas gauged 17,000,000 feet.

Phillips Petroleum Co. No. 14 McCaughtry, SE SE NE section 21-23-2w, was a location on the east side of the Billings field, with work due to start.

Continental Oil Co. No. 2-A Conway, NE NE SW section 16-23-2w, was waiting at total depth of 4,278 feet, after setting 7-inch casing at 4,265 feet. Same company's No. 13 Conway, NW SE SW section 16-23-2w, was drilling below 320 feet, and the No. 14 Conway, SE SW SW section 16-23-2w, was drilling around 1,000 feet. Lincoln & Rudco were rigging up tools at No. 4 O'Neil, NE NW SE section 16-23-2w.

Pottawatomie County

J. F. Smith No. 1 Cockrell, SE SW NE section 35-8-4, St. Louis field, Pottawatomie County, topped Wilcox sand at 4,312 feet, had a hole full of water at 4,396 feet, total depth, plugged back to 3,600 feet and was shot, failed to obtain satisfactory results and was dry and abandoned.

Phillips Petroleum Co. No. 3 Richards, SW NW SE section 35-7-4, topped Wilcox sand at 4,280 feet, total depth 4,338 feet, swabbed water, plugged back to 4,166 feet, was shot and acidized, pumped 8 bbls. of oil and 5 bbls. of water in two hours, pumped off and was abandoned.

Gulf Petroleum Corp. No. 4 Stahl, SW NE NE section 30-7-5, an old well, was plugged back from 4,439 feet to 4,412 feet, acidized, pumped 144 bbls. of oil net and 164 bbls. of water in 24 hours, and was recompleted.

Same company's No. 7 Stahl, NE SE NE section 30-7-5, an old well, was plugged back from 4,322 feet to 4,239 feet, acidized, pumped 314 bbls. of oil net and 60 bbls. of water in 24 hours, recompleted.

Gulf Oil Corp. No. 2 Lulu, SE NW NW section 13-7-4, was a location. Stanolind Oil & Gas Co. and as-

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THE FIRST NATIONAL BANK AND TRUST COMPANY OF TULSA

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sociates No. 5 Rushing, SE SW SW section 32-11-4, Shawnee pool, was moving in tools.

Lincoln County

Summitt Drilling Co. No. 2 Eakers, SW SE SW section 35-15-2e, North Wellston pool, Lincoln County, topped Wilcox sand at 5,151 feet and was completed at 5,126 feet, total depth. It flowed 441 bbls. of oil in 24 hours, with 8,000,000 feet of gas.

Amerada Petroleum Corp. No. 1 Lynde, NW SW NE section 15-13-6, was bottomed at 4,325 feet in second Wilcox sand and pumped 47 bbls. of oil daily.

Summitt Drilling Co. No. 1 well, NE NE NW section 2-14-2e, was a location.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 3 Eakers, SW NE SW section 35-15-2e, total depth 5,135 feet, was shot and swabbed and flowed 86 bbls. of oil in 24 hours, but was not a completion. Mid-Continent Petroleum Corp. No. 1 Vierson, SW SE SE section 4-13-6, Laffoon area, found second Wilcox sand at 4,207 feet, had 450 feet of oil in the hole at 4,225 feet, was to drill a few feet deeper and complete.

Hughes County

Texas Co. No. 1 Meadors, C NE NE section 8-8-10, Yeager area, Hughes County, an old well, was deepened from 3,100 feet to 3,191 feet, had a junked hole and was abandoned.

Hanna & Reynolds No. 1-A Criswell, SE NW SE section 11-9-8, had rig on the ground for a new Hughes County test. Texas Co. No. 1-A Meadors, NE NE section 8-8-10, topped Cromwell sand at 3,096 feet, was bottomed at 3,176 feet and was running casing.

Pure Oil Co. and others No. 1 Rogers, SE SE NE section 18-8-12, Wildcat near Carson in Hughes County, was drilling below 4,650 feet in dry Wilcox sand.

Kay County

E. J. Shaffer and associates No. 1 Smith, NW NW SE section 8-28-1w, Braman district, Kay County, found Wilcox sand at 3,524 feet, was bottomed at 3,539 feet, and was completed, pumping 107 bbls. of oil and 5 bbls. of water daily.

Shell Petroleum Corp. and Continental Oil Co. No. 5 Harn, SE SE NW section 8-28-1w, was building rig and moving in rotary.

Payne County

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Bennett, NE SW NE section 31-19-4e, north of Ripley in Payne County, was drilling below 1,490 feet in sand.

Muskogee County

Adkins No. 1 Eubank, NE SE SE section 14-14-16. Muskogee County, produced 1,000,000 feet of gas and was completed at 665 feet, total depth.

Browning-Potter No. 1 Asbury, C E half NE NW section 33-16-15, was dry and abandoned at 1,792 feet, total depth.

Cleveland County

Fain Drilling Co. and others No. 1 Greenlee, SW SW NW section 22-10-2w, on the east side of the Moore field, Cleveland County, topped Simpson formation at about 7,172 feet and was drilling below 7,250 feet. It was reported checking lower than producers in the field. Gulf Oil Corp. No. 4 James, SW NW SW section 27-10-2w, was drilling in shale below 6,254 feet. Sinclair Prairie Oil Co. and others No. 1 Gross, SW SW NE section 22-10-2w, was drilling below 3,367 feet.

Additional New Work

In Carter County, Samedan Oil Co. No. 20 Higgins A, SE NE NW section 6-2s-2w, was a location; Winkler & McQueen No. 1 Perkins, NE NW SW section 3-1s-3w, had dug cellar and pits; Pure Oil Co. No. 5 Moyer, NE SE NE section 6-4s-3w, was a location.

In Stephens County, Lesh Brothers No. 11 Smith, SE NE NW section 27-1s-5w, was drilling at 250 feet; George L. Pace and others No. 4-C Houston, NW NW SW section 2-2s-8w, was drilling at 30 feet; same operators' No. 15 Allen, SW SE NE section 3-2s-8w, was rigging up rotary.

In Jefferson County, Farlyn Oil Co. No. 60 Seay, SW SE NE SW section 3-7s-5w, was a derrick; Long, Yingling & Lauck No. 28 Seay, SW SE SW SE section 3-7s-5w, was drilling at 30 feet, same operators' No. 29 Seay, SW SE SW SE section 3-7s-5w, twin well, was a location; Bridwell Oil Co. No. 7 Seay, NW NE NE section 10-7s-5w, had sand at 1,096-1,108 feet, total depth, set 7-inch casing at 1,095 feet and was waiting; same company's No. 9 Seay, NE NW NW NE section 10-7s-5w, was a derrick.

Southwest Texas Fields

(Continued from Page 75)

This area has been the scene of an active leasing campaign and several thousand acres are reported to have been taken by Humble Oil & Refining Co., Sun Oil Co., Pan American Production Co. and several independents. Holding attention in this county are two projected deep tests being drilled by Atlantic Refining Co. on the American Rio Grande lease, about 3 miles southwest of Weslaco, which is preparing to drill deeper after cementing a protection string of 7-inch casing at 8,505 feet. This test attempted to blow out several days ago from sand at 8,025-60 feet. In the southwestern part of the county, Y & B Oil Co. ran a Schlumberger survey to a total depth of 5,558 feet and a large rig is being moved in preparatory to drilling below 8,000 feet. With several hundred acres under lease throughout this area, prospects are bright for the present wildcat campaign.

The most interesting development was the revival of wildcat activities along the Jackson trend, which reported three such tests, all in Live Oak County. Four miles north of the Lucas field, section 3, of the J. Poitevent Survey, Ranco Oil Co. has spudded No. 1 Cook Ranch, which is scheduled to test the Hockley Pettus, Government Wells sand and the Yegua horizons. The well is on a block of approximately 5,000 acres. Other locations have been made by James Chew for No. 1 Alma McNeil in the Alexander Parks Survey and C. G. Grimes and others No. 1 Friedle in the Refugio County School Land Survey.

A shallow field of questionable potentiality was opened in the Balcones Fault line district with the completion of McNeil Petroleum Co. No. 1 Moreno, about 3 miles southwest of Lytton Springs in Caldwell County. The Austin Chalk was topped at 1,692 feet and with the hole bottomed at 1,752 feet with 7-inch casing cemented at 1,737 feet, the well is reported to be flowing an estimated 25 bbls. of heavy oil per day. Location is in the I. Allen Survey.

Two miles west of Anchorage, Atascosa County, L. W. Steirens No. 1 T. A. Crawford is being watched as a production test is scheduled to be made after running 1,017 feet of liner. The hole is bottomed at 3,490 feet and Chalk carrying an odor of oil and gas but with little saturation was topped at 3,397 feet.

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Central West

By STAFF CORRESPONDENT

PROSPECTIVE NEW POOL OR AN EXTENSION TO CLAY CITY

MATTOON, Ill., Nov. 22.—The Vermilion Oil Co. appears to have either extended the Clay City pool in Clay County, or to have opened a pool right in the town of Clay City, west and northwest of the main body of the field. The company's No. 1 Duff, C SE SE NE section 19-3n-8e, made a drill stem test at 3,046 feet, the total depth, with packer set at 3,005 feet, and 2,490 feet of oil and 96 feet of mud arose. Preparations were made to run pipe for a production test. Between this well and the main body of the field J. V. Wicklund Development Co. drilled a dry hole to 3,174 feet in SE SE NW section 29-3n-8e, which gives rise to the idea that the Vermilion well may be the opener of a separate pool.

Wells Completed

Eleven oil wells were added to the Central Illinois fields in the past week.

In Clay County, Pure Oil Co. No. 1 W. H. McKinney, NW SW SW section 9-2n-8e, had pay at 3,023-26 feet, and when put on the pump produced 175 bbls. the first 24 hours.

Pure Oil Co. No. 1 G. L. Travis, SE SE SW section 33-3n-8e, was temporarily abandoned at a total depth of 3,015 feet. It was dry all the way. Weller sand was penetrated at 2,631-42 feet.

Pure Oil Co. No. 4 Chaffin, NE NW SW section 27-3n-8e, after a 1,000-gallon acid treatment at 2,973-89 feet, swabbed 73 bbls. per day of net oil.

Pure Oil Co. No. 5 Chaffin, SE NW SW section 27-3n-8e, is a 100-bbl. pumper from pay at 2,962-75 feet, total depth 2,987 feet.

In Richland County, Pure Oil Co. No. 1 Anna Schneider, NW NW NW section 3-3n-9e, flowed 992 bbls. in 24 hours from pay at 2,967-82 feet, total depth 3,000 feet.

W. F. Lacey No. 1 Galloway, SE cor. section 8-3n-9e, flowed 417 bbls. in 24 hours from pay at 2,959-63½ feet.

Pure Oil Co. No. 1 Wilson, NW NE NE section 8-3n-9e, flowed 520 bbls. in 24 hours from pay at 2,945-66¼ feet, total depth 2,977 feet.

Pure Oil Co. No. 1 Frost, SE cor. SW SW SW section 9-3n-9e, had pay at 3,091-98 feet. It was acidized with 2,000 gallons and a 125-bbl. oil load, and later swabbed 83 bbls. of net oil.

In Wayne County, Fitzpatrick & Myers No. 1 Shannon, SW NE SE section 26-2n-8, was finally completed. It was given a pumping test and produced 65 bbls. of oil and 155 bbls. of water, total depth 3,098 feet.

Marion County completions included Adams Oil & Gas Co. No. 3 Frayer, location C, SW cor. NW NE SW section 21-4n-1e, a 16-bbl. pumper at 1,416-26 feet, that had been shot with 5 quarts; Adams Oil & Gas Co. No. 4 Howell, SW NE NW section 28-4n-1e, with pay at 1,381-1,414 feet, shot with 10 quarts, a 50-bbl. pumper; Thomas H. Roberts and others No. 1 Purcell, CNL SW NW SE section 28-4n-1e, which started at 9 bbls. a day, after a shot in sand at 1,440-54 feet. Ray Benoist and others No. 1 Belcher, NW SE SW section 3-3n-1e, was abandoned as dry at 1,575 feet. Benoist sand was missing.

25 New Operations

First reports of new operations started in the Basin fields numbered 25, or more than twice the number of completed wells. Following are the new operations:

Wayne County—The Texas Co. No. 1 Silverman, C E half SW NW section 16-3s-7e, location; Pure Oil Co. No. 2 S. S. Gill, SE SE NW section 27-2n-8e, derrick; Graham & Duncan No. 1 Riggs, C N half NW NE section 32-2n-8e, cellar and pits; No. 2 Riggs, C E half NW SE section 27, rig, and No. 3 Riggs, C W half NE SE section 27, a location.

Wabash County—Martin and others No. 1 W. R. Wood, NE SE SW section 31-1n-12w, location.

Hamilton County—Carpenter and others No. 1-A Clark, NW NW SW section 32-3s-5e, spudded.

Richland County—Ohio Oil Co. No. 7 Arbuthnot, SW NW NE section 8-3n-9e, derrick; No. 8 Arbuthnot, SE NW NE section 8, location; Pure Oil Co. No. 1 Ida Shafer, NW cor. SE SE SE section 8-3n-9e, derrick DeKalb Syndicate No. 1 Sonner, NW cor. SE NE section 17-3n-9e, drilling at 447 feet, after having set 10-inch casing at 189 feet; Pure Oil Co. No. 1 J. Q. Coen, NE NE NE section 4-3n-9e, derrick; Pure Oil Co. No. 1 Fleming A, SE cor. NW SE SE section 8-3n-9e, derrick; Pure Oil Co. No. 1 Francis Coen, C W half SE NE section 8-3n-9e, derrick; Frost No. 1 Farris, SW SW SE section 18-3n-10e, derrick; Pure Oil Co. No. 2 C. L. Wilson, SW NE NE section 8-3n-9e, cellar and pits; Carter Oil Co. No. 4 Watkins, SW SW SW section 34-4n-9e, cellar and pits.

Clay County—Pure Oil Co. No. 1 Scrugham, SW NE NW section 27-2n-8e, derrick.

Clinton County—Ohio Oil Co. No. 4 Frame estate, SW cor. NW NW NW section 8-1n-3w, machine on location; Santa Fe Oil Co. No. 4 Yandell, NE cor. NW NE section 8-1n-3w, location.

Marion County—Adams Oil & Gas Co. No. 16 Merryman, NW cor. section 28-4n-1e, spudded; Adams Oil & Gas Co. No. 1 Hampy, NW cor. SW NE SW section 21-4n-1e, set 8-inch casing at 89 feet and drilling at 1,130 feet; Frank Fredericks No. 1 Mottier, CEL SE NE SW section 28-4n-1e, set 12½-inch casing at 100 feet and drilling at 504 feet; J. I. Staley No. 1 Symcop, CWL NE SE SW section 28-4n-1e, spudded.

Progress in Drilling

In Bond County, Commercial Oil & Gas Co. No. 2 Dotrey, NE NE SW section 30-6n-3w, was shut down at 345 feet, in shale. Universal Oil Co. and DeMayo No. 1 Molden, NW NW NW section 24-6n-4w, set 10-inch casing at 71 feet and was drilling at 875 feet. J. M. Huber Corp. No. 1 Kunz, SE NW NW section 11-6n-5w, had a showing of gas at 3,020-21 feet, total depth. Five-inch casing will be run with packer and the formation tested.

In Clark County, National Consumers Oil No. 1 Jackson, which the owners have been trying for weeks to complete as a producer, has been plugged back to 2,355 feet and is being drilled to 2,367 feet. It will be shot with 40 quarts of nitroglycerin at 2,352-67 feet. It is in NW NE NW section 21-11n-12w, measuring from the Indiana principal meridian.

In Clay County, Graham & Duncan No. 4 Land Bank, SW SE NE section 8-2n-8e, was acidized with 1,500 gallons and was later swabbed to within 200 feet of bottom. It filled 1,500 feet in one hour and was being swabbed again. Seven-inch casing was set at 2,977 feet, total depth 3,034 feet. Graham & Duncan No. 6 Land Bank, SE SW NE section 8-2n-8e, total depth 3,000 feet, swabbed to 300 feet off bottom and shut down for an hour, during which the hole filled 350 feet with fluid. It was given two acid treatments of 1,000 gallons and 2,500 gallons and swabbed to 400 feet off bottom. The hole filled 2,000 feet with oil in 10 minutes. C. H. & C. Co. No. 1 Duff and others, SW NW NE section 7-3n-8e, was drilling at 3,073 feet. It had a small oil showing at 3,013-18 feet, in oolitic lime. Vermilion Oil Co. No. 1 Duff, NE SE NE section 19-3n-8, was given a drill-stem test at 3,005-46 feet. Open 30 hours, it filled 2,580 feet with fluid, of which 2,490 feet was oil and 90 feet mud. Bonnie Oil Co. No. 1 Schrantz, SE SW NE section 31-4n-8e, set 10-inch casing at 180 feet.

Pure Oil Co. No. 1 Clark, NE NW SE section 8-2n-8e, total depth 3,031 feet, set 7-inch casing at 2,967 feet, and plug was being drilled. Pure Oil Co. No. 2 Hubble, NW SE SE section 8-2n-8e, found pay streaks at 3,005-24 feet and was at a total depth of 3,024 feet. Weller sand, saturated, was penetrated at 2,664-90 feet. Southern Illinois Petroleum Co. was drilling at 2,187 feet in No. 1 Nodacker, NW SE SW section 23-3n-7e. Pure Oil Co. No. 5 Chaffin, NW NE SW section 27-3n-8e, total depth 3,029 feet, found the field pay at 3,010-30 feet and was swabbing. Pure Oil Co. No. 1 B. W. Moseley A, SE SE NW section 28-3n-8e, was drilling at 2,688 feet. It had an oil showing in Weller sand at 2,627-65 feet.

In Clinton County, Adams Oil & Gas Co. No. 1 Schmidt, SE SE NE section 2-1n-1w, a wildcat, 2 miles northwest of Centralia, looks like a pool opener. It had saturated Benoist sand at 1,347-70 feet, and on a drill stem test showed 100 feet of oil of 39-gravity and 140 feet of mud and fresh water. The crew was reaming the hole, which had been drilled to 1,584 feet, and casing will be set on top of the Benoist and a production test made. Bartelso Oil & Gas Co. No. 3 Schlorman, NE NW SE SE section 5-1n-3w (corrected location) was given a pumping test and made 25 bbls. of oil in 48 hours. Sand at 976-96 feet had been shot with 30 quarts, as reported last week. Sante Fe Oil Co. No. 2 Robbins, NW cor. SE SE section 5-1n-3w, was drilling in sand at 982 feet, with 200 feet of oil in the hole. McClanahan Oil Co. No. 1 Hester, SE cor. NE NW SW section 26-3n-1w, set 8¼-inch casing at 1,014 feet and was drilling at 1,425 feet.

In Richland County Hanna and others No. 1 Roberts, SW cor. SE SE SE section 8-3n-9e, flowed 874 bbls. in 15 hours through casing at a total depth of 2,953 feet, but was not a completion. Mammoth Producing & Refining Co. No. 5 Stanford-Heitz, SW NW NW section 34-4-9e, at a total depth of 3,034 feet, made a drill stem test, and in 15 hours it showed 20 feet of mud and a little oil and gas. Ohio Oil Co. No. 6 Arbuthnot, NE NW NE section 8-3n-9e, had sand saturated at intervals from 2,950 to 2,974 feet, total depth. Seven-inch casing was set at 2,930 feet. Carter Oil Co. No. 3 Watkins, NE NE SE section 33-4n-9e, was acidized with 4,000 gallons at 2,998-3,008 feet and flowed 1,090 bbls. of oil in 21 hours. Total depth is 3,018 feet.

In Cumberland County, Jolly, Hill, Stipes and others No. 1 Jenkins, SE NE NE section 30-10n-9e, had sand at 1,546-1,661 feet, but ran into water at 1,581 feet, and was drilling at 1,700 feet.

In Effingham County, Carter Oil Co. No. 1 Tate, C W half NW NE section 10-1s-2e, 10 miles southeast of Centralia, had reached a depth of 3,730 feet. A drill stem test developed only 15 feet of mud. There was a light showing of gas at 3,710 feet.

In Perry County, J. H. Forrester No. 1 fee, C W half SW NW section 5-6s-1w, was at a total depth of 5,256 feet, with a fishing job delaying progress.

In Fayette County Hurricane Creek Oil Co. No. 1 Moore and others, SW SW SW section 24-6n-1w, set 10-inch casing at 196 feet and was drilling ahead. Carter Oil Co. was awaiting the arrival of pumping equipment to test its No. 1 Miller, in section 12-8n-3e, which had been acidized at a total depth of 3,100 feet.

In Randolph County, Mabee Consolidated Corp. and Delaney No. 1 Wilson, NE SE NE section 3-4s-5w, was drilling at 2,422 feet.

In Hamilton County, J. Garfield Buell and others No. 1 Dickey, SE SE SW section 22-3s-7e, made a drill stem test at 3,410-52 feet and after 15 hours recovered 230 feet of salt water and mud and a small showing of oil. Operations were shut down to make repairs.

In Saline County Will Rogers and others were drilling below 1,125 feet in No. 1 Saylor, SE SE SE section 3-10s-6e.

In Christian County, Rogers Brothers and others No. 1 Johnston, NE SE SE section 27-12-2w, was at 1,275 feet, shut down for repairs. Parshall & Graham No. 1 Yockey, SW SW NW section 36-15n-2w, had Ste. Genevieve limestone at 810 feet; Niagaran at 1,939 feet, St. Peter sand at 2,925 feet, total depth 3,005 feet. The hole was plugged back to 2,018 feet and given a 500- and a 1,000-gallon acid treatment and the well flowed oil and salt water for an hour. Later it swabbed all water. It

was again plugged back to 1,964 feet to test a formation at 1,946-52 feet and 7-inch casing was set at 1,945 feet.

In Effingham County Kingwood Oil Co. and others No. 1 Bartell, C W half NW NE section 26-6n-5e (corrected location) found Chattanooga shale at 3,910 feet; topped the Devonian at 3,995 feet and was at a total depth or 4,102 feet. A Schlumberger test was planned.

In Wayne County Benedum-Trees, Inc., No. 1 Knapp, NE NE NE section 12-1n-6e, was fishing. It had Ste. Genevieve limestone at 3,013 feet, Fredonia at 3,246 feet, and cored saturation at 3,263-67 feet. A drill stem test resulted in the loss of three stands of drill pipe and the fishing job followed. Same operators' No. 1 Craig, SE SE SW section 28-2n-7e, was coring at 3,116 feet.

In Shelby County, English and others No. 1 C. McClory, SE SE NE section 14-10n-6e, was fishing for drill pipe, total depth 1,965 feet.

In White County, Davis & Harrell No. 1 Poorman, NE NW NW section 5-4s-8e, was drilling at 3,185 feet. Cypress sand was topped at 2,983 feet.

In Marion County, R. E. Dalton No. 1 Clifton, NE cor. SE SW section 15-1n-4e, was drilling at 300 feet.

OHIO

FINDLAY, Ohio, Nov. 22.—The Central Ohio fields yielded four new oil wells and seven new gas wells in the past week, but four dry holes were also among the completions. The record of the week is given below:

In Ashland County, Hanover Township, section 14, Ohio Fuel Gas Co. drilled No. 1 Sarah Fritz to the Clinton horizon for a dry hole. The sand was badly broken. Total depth 2,864 feet.

In Coshocton County, Clark Township, NE quarter, Pure Oil Co. completed No. 5 Harry Carpenter for a 10-bbl. oil well in the Clinton. The sand was at 3,350-74 feet.

In Licking County, Fallsbury Township, section 13, Rutlege & Mosholder completed No. 3 Thomas Moran for an oil well in the Clinton sand at 3,053-97 feet. It made 110 bbls. the first 24 hours after the shot. In Perry Township, section 14, the same operators completed No. 12 William Teagarden, a 4-bbl. Berea sand oil well. Top of the Berea was at 746 feet.

In Meigs County, Lebanon Township, section 26, Proffitt and others No. 2 Luther Lane is a gas well in the Berea Grit at 2,039-44 feet. It was shut in at 255,000 feet.

In Monroe County, Franklin Township, section 32, Beechgrove Oil Co. drilled No. 2 George W. Hartshorn through the Salt sand for a small gas well. The total depth was 1,100 feet.

In Morgan County, Marion Township, Lot 24, C. P. Bowman completed No. 1 Charles T. Woodyard, a small gas well in the second Berea at a total depth of 1,576 feet. In Windsor Township of the same county, Lot 1135, Kepple and others No. 2 John A. Carle, a Maxon sand gas well, gauged 396,000 feet naturally. The sand was at 933-40 feet.

In Noble County, Elk Township, section 22, Metcalf completed No. 11 C. H. Masters, a 2-bbl. pumper in the Germantown sand, total depth 948 feet. In Olive Township, section 13, Ohio Fuel Gas Co. No. 1 Lemanuel Davis gauged 300,000 feet naturally, from the Maxburg 800-foot sand. The total depth of the hole was 1,137 feet. In Wayne Township, section 21, John Bindas drilled the No. 1 C. H. Law to 1,800 feet. Berea sand was badly broken and no production was found.

In Perry County, Reading Township, section 9, Perry Sturm and others drilled No. 2 F. W. Arnold through the Berea for a dry hole to a total depth of 876 feet. In the same township, section 8, Ohio Fuel Gas Co. No. 1 Blanche Yarger had a show of gas in the Clinton from 3,000-30 feet. A shot did not increase production, and the hole was plugged and abandoned.

In Stark County, Jackson Township, section 2, the East Ohio Gas Co. completed No. 2 Willowdale Country Club, for a gas well gauging 1,000,000 feet from the Clinton sand at 4,222-78 feet.

In Washington County, Grandview Township, section 34, Hanlon and others drilled No. 1 Henry Fry to the Squaw sand. It was shot and made a small gas well. The total depth was 1,563 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Nov. 22.—Five oil wells and two gas wells were completed in Eastern Kentucky in the past week, with two of the wells outstanding producers.

McCoun & Wissing completed No. 6 Andrew Combs, on Billies Fork, Big Sinking district, Lee County, at a total depth of 1,154 feet, with a daily production of 200 bbls. of oil.

The other good producer is a gasser in Floyd County, Kentucky-West Virginia Gas Co. No. 559 on the John Dillion land on Dropping Lick Fork of Ivy Creek. The well reached a total depth of 1,426 feet in Maxton sand, and was good for 2,464,000 feet of gas per day together with a good oil flow. The same firm also completed No. 534 on the Jennie Caldwell farm Levisa Fork in Floyd County at total depth of 2,622 feet in shale, and it is showing 213,000 feet of gas before a shot.

Thomas Whittmer completed No. 5 C. J. Tipton on Billies Fork, Big Sinking district, Lee County, at 400 feet, with a daily flow of 100 bbls. of oil. Brener & Adams completed No. 1 H. C. Johnson, on Bear Track, a 5-bbl. well. South Penn Oil Co. has a 5-bbl. daily producer in No. 96 on Flahaven Land Co. land in Big Sinking district of Lee County.

Mrs. Agatha Wireman completed No. 21 J. M. Townsend, in the South Fork district of Powell County. It started at 5 bbls. of oil per day.

Knott County

The Inland Gas Corp. is down 2,148 feet in Mayo Craft No. 1 on the Right Fork of Troublesome Creek in Knott County. The same firm is down 990 feet in Whittaker & Waddell in the same locality.

Floyd County

Kentucky-West Virginia Gas Co. is down 1,768 feet, in slate and shell, in No. 557 Ingram Stepp land, on Johns Creek and had reached 940 feet in Salt sand, in No. 3 John Layne at the mouth of Camp Branch of Levisa Fork. The same firm was drilling at 1,429 feet in No. 5229, on the Woods land on Porter Branch, and is grading location for No. 5233, John W. Burchett land, on Cow Creek.

Martin County

The Kentucky-West Virginia Gas Co. is moving to location for No. 560 Melissa Ward on Rockhouse Fork of Rockcastle, and is drilling out pipe in No. 5226, C. W. Preece land, on Coldwater Fork. The well is testing oil. The company is moving in to start No. 5231 and rigging up No. 5234, both on the C. W. Preece land.

Lee County

C. E. Townsend, agent, was drilling at 520 feet in No. 13 and at 265 feet in No. 14, both on the Combs land.

Magoffin County

Bed Rock Petroleum Co. was drilling at 740 feet in No. 13 J. J. Prater on Prater Fork of Mash Fork in the Burton-Oil Springs district. Hope Oil Co. is down 1,325 feet in the Lee Kimbleton test on Blanton Branch.

Lawrence County

Well No. 1 on the John Rose land in Lawrence County is being cleaned out.

WESTERN KENTUCKY

OWENSBORO, Ky., Nov. 22.—Six oil wells, six gas wells and five dry holes, a total of 17 completions, summed up results in the Western Kentucky field in the past week. A 100-bbl. well from a very shallow sand in Hancock County and a 1,000,000-foot gas well in Ohio County, were the feature completions.

Following is the record of completed wells and new work:

Ohio County

Askin district: Weir & May No. 2 Ollie Basham, 200,000 feet of gas, Bethel sand 573-80 feet, abandoned.

Olaton district: Cox & Lang No. 1 Robert Armes, dry hole, Bethel sand 627-32 feet.

Fordsville district: Barney Calvert No. 6 N. R. Baize, 70,000 feet of gas, 80 pounds rock pressure, Jett sand 413-33 feet, total depth 435 feet.

Haynesville district: Moss Oil Co. No. 4 W. H. Lyons, 76,000 feet of gas, 71 pounds rock pressure, Barlow sand 563-79 feet.

Ralph district: Snowden & McSweeney No. 29 Howard Heirs, 10 bbls., Jett sand. Globe Oil Co. No. 5 C. M. Farmer, dry hole.

Adaburg district: B. & B. Oil Co. No. 21 Tom Westerfield, drilling at 300 feet. Rex-Pyramid Oil Co. No. 15 Len Stinnett, drilling at 150 feet.

Friendship Church district: A. D. Noe and others No. 5 A. S. Crawley, 20 bbls., Bethel sand, total depth 520 feet. A. Teller and others No. 7 Clarence Farmer, 94,000 feet of gas, 127 pounds rock pressure, Jackson sand 653-678 feet. A. Teller and others No. 8 A. H. Medcalf, spudding in. Moss Oil Co. No. 3 D. S. Smith, spudding in.

Taffy district: Frank Randall et al No. 10 W. C. Hoover, 5 bbls., Stray sand, total depth 577 feet. Schaffer and others No. 3 G. W. Russell, drilling at 110 feet.

Heflin district: Boling & Callas No. 5 Mrs. J. Simmerman, 1,000,000 feet of gas, 400 pounds rock pressure. Bethel sand 1,388-97 feet, total depth 1,402 feet.

Hancock County

Easton district: J. C. Ellis No. 21 Link Richards, 100 bbls., Jett sand 238-80 feet; No. 10 H. D. Fuqua, fishing.

Pellville district: C. D. Walker No. 3 Elmer Boling, 20 bbls., Jett sand 343-76 feet, total depth 382 feet, shot with 100 quarts at 345-72 feet. Frank Damron and others No. 5 Fred Boling, dry hole, Jackson sand 550-65 feet; No. 5 Alice Bates, spudding in.

Dukes' School district: Galey & Fletcher No. 1 Ed Hall, 90,000 feet of gas, Bethel sand 367-76½ feet.

Indian Lake district: Galey & Fletcher No. 1 J. W. Holder, deep test, drilling again after being shut down at 1,508 feet.

Daviess County

St. Joseph district: I. B. Browning No. 1 Jennie Waltrip, moving in. Haynes district: Rex-Pyramid Oil Co. No. 1 Joe Brown, 400,000 feet of gas, Jackson sand, 620-628 feet; No. 4 Rollie Cooper, spudding in.

Hewlett's Store district: S. J. Serman No. 2 Joe Johnson, dry hole, 960 feet.

McLean County

Island district: South Penn Oil Co. No. 1 Mrs. Rena Brown, deep test, drilling in Mississippi lime at 2,906 feet.

Henderson County

Niagara district: Black Gold Oil Co. No. 11 C. M. Gish, 100 bbls., Niagara sand.

Union County

Boxville district: H. Z. Clark and others No. 4 Waller Young, moving in.

Webster County

Sebree district: I. B. Browning and others No. 6 J. R. Ramsey, deep test, drilling at 275 feet.

Export Shipments

LOS ANGELES, Calif., Nov. 22.—A check of arrivals and scheduled arrivals indicates that a minimum of 26 tankers of both Japanese and other foreign registry are due to load approximately 2,000,000 bbls. of crude and refined oil from California ports to Japan during November and this movement is expected to continue unabated during December. Thirteen tankers have been chartered for a total of 24 trips to foreign countries with California petroleum from November to early next year and although the volume of business holds strong, charter rates have weakened slightly. Japan, stocking heavily on petroleum reserves in view of her unsettled political status, continues to lead in destinations for the chartered tankers as eight of the ships for an aggregate of 19 trips have been fixed for Japan delivery. The tankers Drafn, Fosna, Sir Osborne Holmden, Hoegh Hood and Nordanger have been fixed for three trips each to Japan. The Athelcrown has been fixed for two trips and the Leiv Eriksson and Thorsholm for one trip each. Other tanker charters for November are the Sveve, Strix and Svolder for United Kingdom and the Caroline Maersk for Antwerp, Belgium. The latter vessel left California a few days ago with a cargo of Santa Maria Valley crude oil destined for Belgium. In addition to this bulk movement, a considerable quantity of aviation gasoline is being transported to Japan in iron drums ostensibly for use of the Imperial Japanese navy. Early this week the Norwegian freighter Snestad loaded 16,000 drums of aviation gasoline for Japan and a week or 10 days ago a similar cargo was lifted at Los Angeles harbor for movement to China.

Kansas Developments

By
DAL DALRYMPLE

START MANY NEW WILDCATS; EXTENSION FOR TRAPP FIELD

Snow and subzero temperatures have failed to halt exploration in Kansas, several new wildcats being started and numerous first reports of operations in proven areas being recorded the past week. New wildcats were reported in Ellis, Trego, Stafford, Reno, Butler, Sumner, Rice, Ellsworth, Barton, McPherson, Sedgwick and Barber counties.

Fred Rust and associates No. 1 Drach, NE SW section 12-22-13w, wildcat pool opener northwest of Hudson in Stafford County, made potential of 945 bbls. of oil from Siliceous lime at 3,709 feet after acid treatment. It is on a cross trend between the Gates and Hudson pools.

The deep test being drilled southeast of Dodge City in Ford County by Olson Oil Co. and associates at No. 1 Fowler, C SW section 26-27-22w, was making hole below 5,526 feet, presumably still in Mississippi lime. The lime was found at 5,045 feet, with a small showing of oil reported at 5,060 feet.

Cities Service Oil Co. No. 1 Bittner, NW SE section 8-16-13w, an effort to extend the Trapp pool about one-half mile south in Barton County, had Siliceous lime at 3,376-84 feet, total depth, oil rose 2,700 feet in the hole in 50 hours and it was acidized. Test had not been completed.

Phillips Petroleum Co. No. 1 Johnson, section 8-20-19w, interesting wildcat west of Vaughn in northwest Pawnee County, was making hole below 3,005 feet.

Wildcat Completions

Discovery wells were completed in Sumner and Russell counties the past week, and four other Kansas wildcats were completed as failures.

Magnolia Petroleum Co. No. 1 Baird, SW SE SW section 2-30-4w, opened a new pool in northwestern Sumner County, about 1 mile south of the Sedgwick County line. Top of Kansas City lime was 3,345 feet, Chat 3,968 feet, based lime 4,310 feet, Simpson horizon 4,394 feet, total depth 4,401 feet, and it swabbed 782 bbls. of oil and 1,500 bbls. of water in 20 hours. It was plugged back and completed at 4,395 feet, making potential of 378 bbls. of oil, with 2½ bbls. of water. Gravity of the oil was 43 degrees, plus.

S. L. Parks and I. W. Murfin No. 1 Opdycke, SW cor. section 20-14-13w, about 1 mile north of the Hall pool in Russell County, topped anhydrite at 700 feet, Topeka lime 2,705 feet, Kansas City lime 2,905 feet, Gorham sand 2,178-80 feet, total depth, and was completed for potential of 353 bbls. of oil.

Colonial Oil Co. and others No. 1 Hays, SE SE SW section 4-26-12w, Pratt County wildcat, had Siliceous lime at 4,299 feet, water intruded at 4,325 feet, total depth, and it was abandoned.

Brunson Drilling Co. and Glimac Oil Co. No. 1 Weisner, SE SW SE section 31-13-17w, wildcat in Ellis County, topped Siliceous lime at 3,565 feet, had a showing of oil at 3,565 feet, oil rose 275 feet in the hole at 3,607 feet, total depth, but it swabbed only 2 bbls. of oil an hour after acidizing. It was plugged back to 3,624 feet, was acidized, swabbed oil and pumped as high as 30 bbls. of oil in 24 hours, with 5 per cent water; recemented 5-inch casing at 3,561 feet, was acidized again, pumped only 1½ bbls. of oil an hour, and was abandoned.

Phillips Petroleum Co. No. 1 Trego, C SE NW section 14-12-23w, Trego County wildcat, found Siliceous lime at 4,283 feet, water rose in the hole and it was dry and abandoned at 4,290 feet, total depth.

George Seidhoff and associates No. 1 Greiss, NW SW SE section 16-8s-10w, wildcat in Mitchell County, topped Kansas City lime at 2,710 feet, the hole filled with water at 2,835-45 feet, Viola lime was found at 3,743-3,970 feet, Simpson zone 3,970 feet, more water at 4,022 feet, and it was dry and abandoned in Siliceous lime at 4,047-53 feet, total depth.

Russell County

Coralena Oil Co. No. 7 Deines, SW NE NE section 36-15-14w, Trapp district, Russell County, found Siliceous lime at 3,287 feet, total depth 3,291 feet, was acidized and made potential of 2,329 bbls. of oil.

Darby Petroleum Corp. No. 6 Michaelis, SE SW SE section 36-15-14w, made potential of 2,078 bbls. of oil after acid treatment. Top of Siliceous lime was 3,304 feet, total depth 3,313 feet.

Coralena Oil Co. No. 8 Hank Sellens, NE NW NW section 30-15-13w, had Siliceous lime at 3,308-11 feet, total depth, was acidized and made potential of 2,233 bbls. of oil.

W. I. Southern, Inc., No. 13 Boomhower A, SW NE NE section 30-15-13w, topped Siliceous lime at 3,247 feet, was bottomed at 3,255 feet, acidized and made potential of 434 bbls. of oil, reacidized without increasing yield and was completed.

Same operator's No. 11 Sellens Heirs, SW NE SW section 29-15-13w, found Siliceous lime at 3,321-28 feet, total depth, and made potential of 1,904 bbls. of oil after acid treatment.

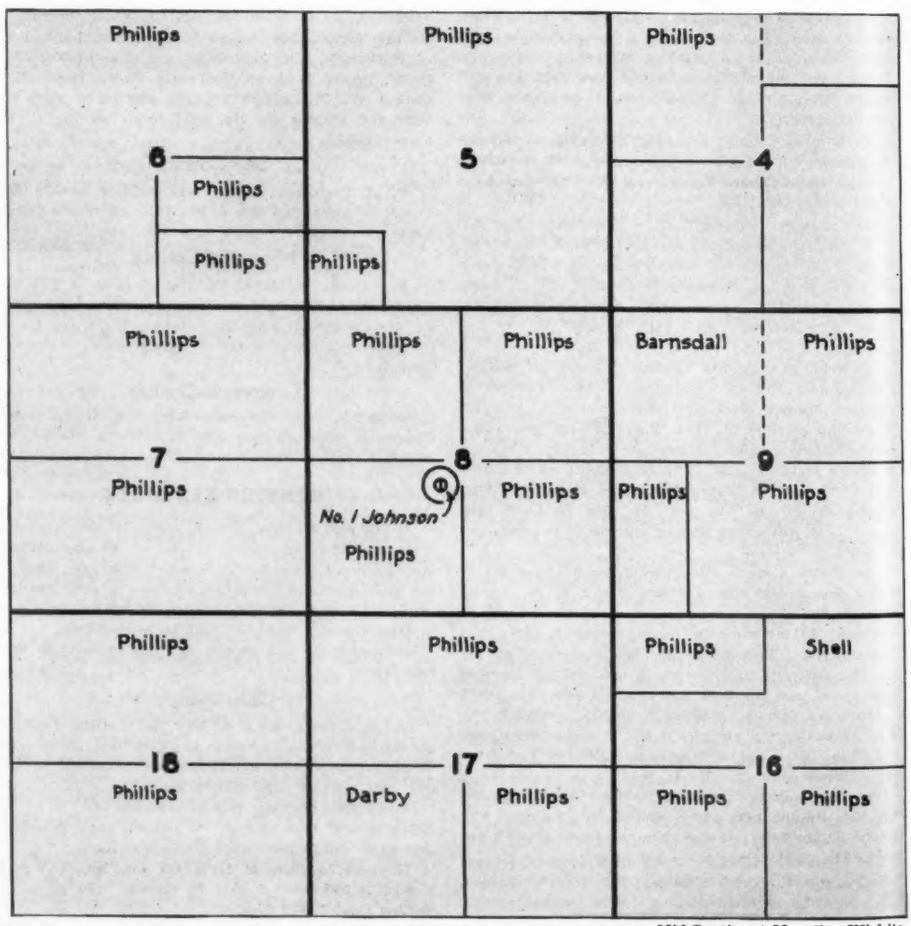
Cities Service Oil Co. and others No. 6 Bender A, SE SE NW section 25-15-14w, made potential of 2,587 bbls. of oil after acidizing Siliceous lime topped at 3,313 feet, total depth 3,317 feet.

Polcyn No. 2 fee, SE SW SE section 10-14-15w, had Kansas City lime at 3,050-59 feet, total depth, was acidized, pumped 236 bbls. of oil in four hours and made potential of 1,417 bbls.

Transwestern Oil Co. No. 11 William Polcyn, NE NE SW section 11-14-15w, topped Kansas City lime at 3,012 feet, total depth 3,059 feet, was acidized, pumped 418 bbls. of oil the first four hours and earned potential rating of 2,506 bbls.

Phillips Petroleum Co. No. 12 Hoffman, NE SE SE section 31-15-13w, an old well, was deepened from 3,354 feet to 3,366 feet, acidized, pumped 506 bbls. of oil in four hours, potential 2,931 bbls., and was recompleted.

New work in Russell County: Coralena Oil Co. No. 8 Deines, NW NE NE section 36-15-14w, rig; Darby Petroleum Corp. No. 7 Michaelis, SW SW SE section 36-15-14w, moving in material; Cities Service Oil Co. No. 1 Krug, NW NW NE section 13-15-14w, location; J. C. Shaffer No. 2 Polcyn, NW NW NE section 14-14-15w, set 12½-inch casing at 583 feet; National



Mid-Continent Map Co., Wichita

Phillips Petroleum Co. No. 1 Johnson, section 8-20-19w, Pawnee County wildcat, west of Vaughn, was drilling below 3,005 feet

Refining Co. No. 4 Reinhardt, NE SE NE section 19-14-14, rig; Stern and others No. 7 Miller, SW NE NW section 31-14-13w, cellar; J. J. Hall No. 8 Miller, SE SW NW section 31-14-13w, rigging up; Magnolia No. 1 Rugg, SE SW NE section 27-14-13w, rig.

Estimated Daily Production

Estimated daily production of Kansas for the week ending November 20 and for the preceding week was as follows:

	Nov. 20	Nov. 13
Oxford City	1,575	1,400
Burrton	10,225	13,725
Ritz-Canton	5,100	4,825
Graber	2,875	2,825
Hollow-Nikkel	2,600	2,475
Lorado	1,675	1,625
Voshell	2,275	2,350
Wellington	3,225	3,000
Ellsworth County:		
Lorraine	3,000	3,625
Other pools	1,140	1,330
Rice-Barton counties:		
Bloomer	3,450	4,475
Chase	6,700	8,025
Geneseo	2,450	2,475
Raymond	1,250	1,725
Silica	12,550	17,175
Keesling	1,100	1,400
Hauschild	1,325	2,100
Miscellaneous Rice	8,700	8,340
Miscellaneous Barton	7,400	8,480
Russell County:		
Fairport	1,850	1,830
Gorham	1,690	1,750
Russell	1,675	1,955
Sullivan	6,700	7,380
North Trapp	13,790	13,965
Miscellaneous Russell	8,900	7,980
Sedgwick County:		
Valley Center	1,130	1,030
Miscellaneous	2,785	2,585
Ellis County:		
Bemis	4,825	4,975
Miscellaneous	3,180	3,015
Kingman County	620	605
Stafford County	2,535	3,745
Greenwood County	9,975	9,950
Butler County	16,100	16,350
Other fields	24,580	24,810
Total Kansas	178,950	193,300

Barton County

Texas Co. No. 5 Hoffman, SE NW NW section 6-16-13w, extended the Trapp field one-fourth mile south in Barton County. It had Siliceous lime at 3,323 feet, total depth 3,340 feet, was acidized, pumped 447 bbls. of oil in the first four hours and made potential of 2,441 bbls.

Ohio Oil Co. No. 2 Stettinger, NW NW NE section 1-16-14w, found Siliceous lime at 3,273 feet, was bottomed at 3,285 feet, acidized, and made potential of 1,629 bbls. of oil.

Stanolind Oil & Gas Co. No. 1 Thorne B, SE cor. section 27-16-13w, Susank district, topped Siliceous lime at 3,363 feet, total depth 3,369 feet, was treated with acid and made potential of 839 bbls. of oil.

Darby Petroleum Corp. No. 3 Burmeister, NW SW SE section 3-17-11w, extended the Kraft pool about one-fourth mile northward. It pumped 358 bbls. of oil the first four hours and made potential of 2,153 bbls., after acid treatment. Top of Siliceous lime was 3,351 feet, total depth 3,358 feet.

Stanolind Oil & Gas Co. No. 2 Dick, NE SE SW section 2-20-11w, Silica district, had Siliceous lime at 3,275 feet, was bottomed at 3,285 feet, and completed for potential of 1,441 bbls. of oil.

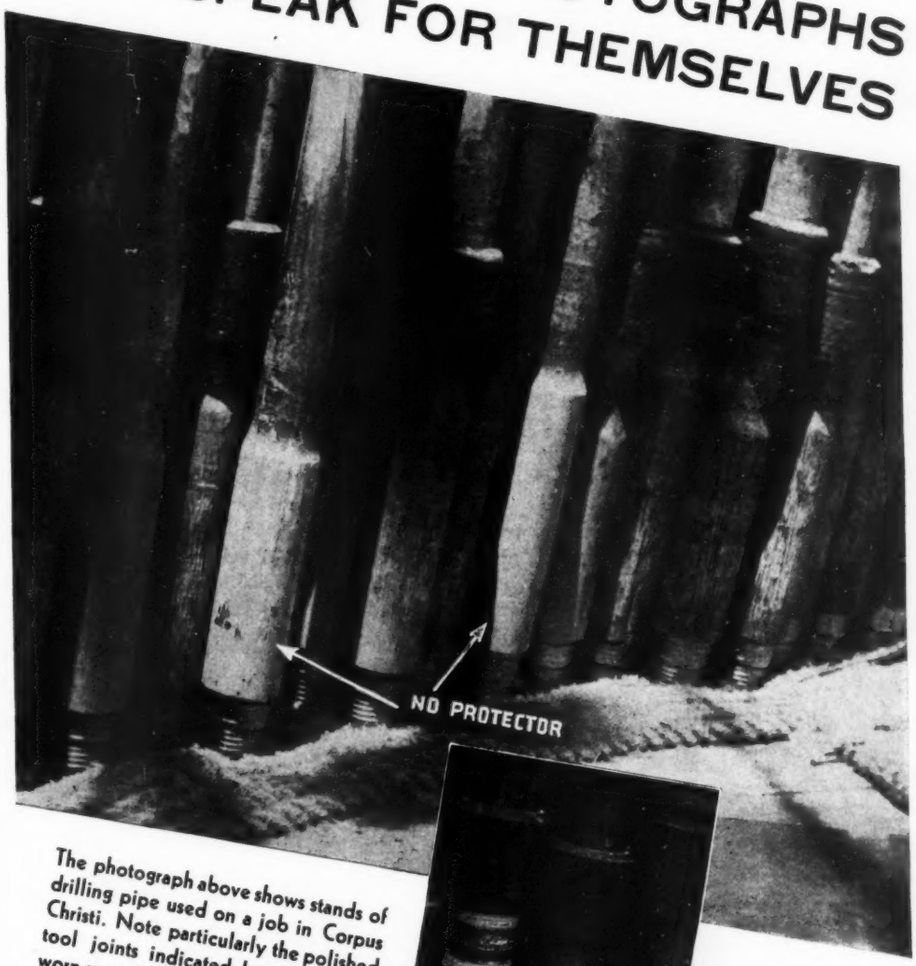
Same company's No. 3 Schartz A, NE NE NW section 2-20-11w, topped Siliceous lime at 3,286 feet, total depth 3,316 feet, water intruded and it was plugged back to 3,314 feet and completed for potential of 315 bbls. of oil.

Same company's No. 5 Kowalsky, SE NE NE section 11-20-11w, was acidized and made potential of 1,020 bbls. of oil from Siliceous lime topped at 3,279 feet, total depth 3,295 feet.

Operations in Barton County reported for the first time: Stanolind Oil & Gas Co. No. 3 Dick, SW cor. section 2-20-11w, rigging up rotary; Darby Petroleum Corp. No. 1 Casey, SE SE NW section 4-16-12w, moving in material; Thayer Drilling Co. and James Brouk No. 1 Soderstrom, SE SE NW section 21-17-13w, wildcat, Larie Oil & Gas Co. and Atlantic Refining Co. No. 1 Meyer B, SE NE SW section 13-20-11w, rig; Stanolind Oil & Gas Co. No. 7 Kowalsky, NE SE NE section 11-20-11w, spudded; Continental Oil Co. No. 1 Ford, SW SW NW section 10-17-13w, rig; Phillips Petroleum Co. No. 1 Krautwurst, SE SW SW section 11-17-11w, cellar; Shell Petroleum Corp. No. 4 Schneider B, SE NE NW section 1-16-14w, rig; Cities Service Oil Co. No. 1 Bitter C, NW NW NE section 18-16-13w, rig; Polk & Fortson No. 1 Kultgen, NE NE SW section 16-16-13w, set 10-inch casing at 200 feet; same operators' No. 1 Jorns, SW SW NE section 16-16-12w,

No metal is used in Patterson-Ballagh Protectors. None is necessary because the rubber is of special composition which retains its original strength and tenacity. This inherent resiliency of specially compounded rubber assures the protectors retaining their original grip on the drill pipe. With the rotary mud serving as a lubricant, Patterson-Ballagh Protectors serve as bearings between tool joints and casing.

UNRETOUCHED PHOTOGRAPHS THAT SPEAK FOR THEMSELVES



The photograph above shows stands of drilling pipe used on a job in Corpus Christi. Note particularly the polished tool joints indicated by the arrows, worn smooth without Patterson-Ballagh Protectors. Note the tool joints on the pipe where protectors have been installed with wrench marks clearly discernible.

At the left is a photograph of drilling pipe used on a well in the Rodessa field of Louisiana. This pipe and protectors have just finished their seventh well with fourteen months' continuous drilling. There is no loss in diameter or change of position of the Patterson-Ballagh Protectors on the drill pipe

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PATTERSON-BALLAGH PROTECTORS

rig; Phillips Petroleum Co. No. 2 McClanahan, SW SW SE section 7-16-13w, location.

Ellis County

Ryan Consolidated Corp. had one of the larger completions of the week in Kansas at No. 2 Bemis C, SW SE SW section 21-11-17w, Bemis field, Ellis County. It was completed in Siliceous lime at 3,436-41 feet, total depth, and made potential of 3,093 bbls. of oil.

Cities Service Oil Co. No. 6 Johansen, SW NE NE section 22-11-17w, topped Siliceous lime at 3,395 feet, total depth 3,404 feet, and made potential of 2,072 bbls. of oil.

Deep Rock Oil Corp. No. 25 Baumer, NW SE NE section 27-11-17w, found Siliceous lime at 3,429 feet, was bottomed at 3,434 feet and made potential of 3,143 bbls. of oil.

York State Oil Co. No. 2 Bemis, NW NE SW section 28-11-17w, pumped 396 bbls. of oil the first four hours and earned potential of 1,974 bbls. Top of Siliceous lime was 3,421 feet, total depth 3,424 feet.

T. M. Deal Oil & Gas Co. No. 2 Bemis-Deal, NW NW NE section 4-12-17w, Shutts sector, had Siliceous lime at 3,542 feet, total depth 3,551 feet, was acidized and made potential of 1,669 bbls. of oil.

The following new activity in Ellis County was reported: Helmerich & Payne No. 1 Stebbens, NW NW SE section 7-13-20, wildcat, location; Phillips Petroleum Co. No. 4 Bemis, SW SE NE section 21-11-17w, rigging up rotary; Kerlyn Oil Co. No. 1 Rumsey, SW cor. section 23-11-17w, building rig; L. A. Hall No. 1 Heyl, SE SE NW section 14-13-16w, rig; Cities Service Oil Co. No. 3 Hall B, NW SW NW section 26-11-17w, rig; Magnolia Petroleum Co. No. 8 Johansen, NE SE SE section 22-11-17w, location.

Rice County

Largest producer of the week completed in Rice County was Texas Co. No. 10 Kleile, SE NE SW section 34-19-10w, Silica district. It topped Siliceous lime at 3,296 feet, total depth 3,305 feet, pumped 733 bbls. of oil in the first eight hours and made potential of 2,110 bbls. of oil, with 2 per cent water.

Stanolind Oil & Gas Co. No. 4 Hathaway, NW NE SW section 33-19-10w, had Siliceous lime at 3,312 feet, total depth 3,325 feet, water intruded, it was plugged back to 3,315 feet and acidized but was dry and abandoned.

Pryor & Lockhart No. 2 Hannekratt, NE SE SW section 8-21-7w, Theede sector, found Conglomerate at 3,330 feet, total depth 3,345 feet, and made potential of 1,335 bbls. of oil.

Obin-Long and others No. 2 Hubenett, NW NW SW section 23-20-6w, had Mississippi lime at 3,392 feet and was dry and abandoned at 3,432 feet, total depth.

Republic Natural Gas Co. No. 1 Deweese, SE SW NW section 32-20-7w, topped Conglomerate at 3,318 feet, had pay at 3,325 feet, total depth 3,339 feet, and pumped and flowed 494 bbls. of oil daily.

Continental Oil Co. No. 1 Peterson, SW SW SE section 10-20-9w, was an abandoned location.

Sinclair Prairie Oil Co. No. 4 Knop, SW NW NW section 4-20-10w, Silica sector, topped Siliceous lime at 3,339 feet, was bottomed at 3,348 feet, acidized and made potential of 294 bbls. of oil.

New work in Rice County: Continental Oil Co. and others No. 3 Wood, SW NW SE section 12-18-8w, building rig; Joe Aylward No. 1 Weihe, SW SW NE section 23-18-9w, wildcat, building rig; Continental Oil Co. No. 4 Anna Groth, NE NW SW section 32-20-7w, building rig; Joe Aylward No. 1 Weihe, SW SW NE No. 1 Sterling College, NW cor. section 27-21-9w, location; Saco Oil Co. No. 1 Wickerham, NE SW SE section 7-20-9w, was at plugged back depth of 2,240 feet; Fred Phillips No. 1 Oden, SE NE NW section 22-20-7w, spudded; Witt and others No. 1 Peiff, NW NW SE section 22-18-10w, rig; Skelly Oil Co. No. 1 Volkland B, NW SW NW section 5-18-10w, location.

Stafford County

Stanolind Oil & Gas Co. No. 12 Komarek, NW SE SE section 30-22-11w, Hudson pool, Stafford County, made potential of 1,698 bbls. of oil and was completed at 3,560 feet, total depth. Top of Siliceous lime was 3,530 feet.

Stanolind Oil & Gas Co. and associates No. 1 Paulson, NE NE SW section 23-24-11w, Zenith pool, had Kansas City lime at 3,395 feet, total depth 3,809 feet, and made potential of 882 bbls. of oil.

First reports of new operations in Stafford County: Tom Palmer No. 1 Fair, SE NE SW section 10-22-11w, wildcat, drilling below 1,700 feet; Torry & Feaster and others No. 1 Heggy, NE NE SW section 26-23-11w, wildcat, rigging up rotary; Stanolind Oil & Gas Co. No. 1 Wadsack, SW SW NE section 4-25-11w, wildcat, rigging up rotary; same company's No. 1 Schilling, SE SE NW section 12-22-13w, cellar.

McPherson County

H. & M. Drilling Co. and others No. 1 Peterson, NW NW SE section 24-19-3w, Chindberg area, McPherson County, found Mississippi lime at 2,993 feet, had pay at 3,001-09 feet, total depth, was acidized and made potential of 787 bbls. of oil.

Continental Oil Co. and others No. 3 Wenger, SW NW NE section 32-21-1w, Graber pool, topped Hunton lime at 3,304 feet, was bottomed at 3,333 feet, and made potential of 569 bbls. of oil after acidizing.

New work in McPherson County: Leonard Page No. 1 Dixon, NE NW NW section 7-19-2w, rig; Phillips Petroleum Co. No. 1 Galle, NW NW NE section 11-21-2w, rig; E. B. Shawver No. 3 Lively, SE NW NW section 21-19-1w, rig; Jeff Archer and others No. 1 Templin, NW SW SE section 32-17-3w, location; Carter Oil Co. No. 1 Hoglund, NW SW SW NW section 8-17-3w, cellar.

Ellsworth County

Yoches and others No. 3 Patzner, SE SE NW section 30-17-10w, Bloomer district, Ellsworth County, found Kansas City lime at 3,000 feet, was bottomed at 3,284 feet, acidized, pumped 698 bbls. of oil in eight hours and was rated potentially at 1,990 bbls. of oil.

The following new work in Ellsworth County was reported: Ralph Wixson and others No. 1 Peterman, SW cor. section 28-17-10w, wildcat, location; Skelly Oil Co. No. 3 Zink, NW SW SW section 32-17-10w, location; Transwestern Oil Co. and others No. 1 Disque, SE cor. section 32-17-10w, moving in material.

Harvey County

Olson Drilling Co. and Shell Petroleum Corp. No. 5 Schrag, NE NE SW section 30-23-3w, Harvey County sector of the Burrton field, found Chat at 3,278 feet, total depth 3,365 feet, was acidized and flowed 643 bbls. of oil, with some water.

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New operations in Harvey County: Wilhelm & Nye No. 1 Cunningham, SW SW NE NE section 19-23-3w, rig; National Refining Co. No. 1 Brown Brothers, NW SW NE section 22-23-2w, location; Sunray Oil Co. No. 3 Hege, NE NW SW section 13-22-2w, rigging up rotary.

Reno County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 5 Peter Hilger A, SW SW NW section 16-26-4w, Hilger pool, Reno County, had Viola lime at 4,036-38 feet, total depth, was acidized and made potential of 818 bbls. of oil.

Four new operations were reported in Reno County, as follows: McCole and others No. 1 Mathews, SW NW NW section 15-24-10w, wildcat, location; Salt City Gas Co. No. 1 Haines, C NW SE section 33-24-5w, building rig; Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 6 Hilger A, NW SW NW section 16-24-4w, rigging up rotary; Wilcox Oil & Gas Co. No. 4 Montford, NE NE SW section 12-23-4w, rig.

Rush County

Carter Oil Co. and associates No. 1 Agnes Pascoe, C N half NW NW section 36-18-16w, Albert area, Rush County, had LaMotte sand at 3,564 feet, total depth 3,595 feet in sand, pumped 87 bbls. of oil in eight hours and made potential of 150 bbls. of oil, with 8 bbls. of water.

Moss Petroleum Co. No. 1 Rodie, NE cor. section 27-18-16w, was rigging up rotary.

Butler County

Morgan & Morris No. 5 Guenther, NE SW NE section 29-26-7, Butler County, had Mississippi lime at 2,753 feet, total depth 2,772 feet, was acidized and made potential of 60 bbls. of oil.

Trees Oil Co. No. 1 Sutter Estate, NE NE NW section 12-28-6, topped Wilcox sand at 3,178 feet, water intruded at 3,205-09 feet, total depth, and it was abandoned.

Stewart & Gross No. 2 Piper, SW SE NW section 13-29-3e, an old well, was deepened from 1,845 feet to Kansas City lime at 2,177 feet, total depth 2,255 feet, acidized, pumped 6 bbls. of oil daily and was recompleted.

New work in Butler County: Steinbuchel and others No. 1 Fox, NW SE NE section 25-26-3e, wildcat, rigging up machine; Stewart & Gross No. 1 Piper, NE SE NW section 13-29-3e, an old well, deepened from 1,636 feet to 1,895 feet, cleaning out; E. M. Landon and associates No. 3 McCaig, SW SW SE section 13-28-6, location; Polhamus No. 1 Semick, SW cor. section 33-27-7, location; National Refining Co. No. 1 Pray, SW NW SW section 31-27-3e, location; Wixon and others No. 1 Long, SE cor. section 2-25-3e, machine.

Woodson County

Pure Oil Co. No. 20 Winterschied, C NW NE section 6-24-14, Woodson County, had Bartlesville sand at 1,532-53 feet, total depth, produced 50,000 feet of gas and was completed.

Three new operations in Woodson County were reported. Pure Oil Co. No. 10 Stevenson, C S half N half N half section 5-24-14, was rigging up machine. C. L. Sheedy and others No. 3 Tipton, NW NW NE section 29-25-14, was drilling below 250 feet. Saco Oil Co. No. 2 Hassenpflug, NW NW NE section 34-25-14, had spudded.

Grant County

R. K. Wilson No. 1-18 Burnham, C SW section 18-28-37w, Grant County, produced 6,180,000 feet of gas and was completed at 2,660 feet, total depth.

Same operator's No. 1 Sullivan, C SW section 26-28-37w, was rigging up rotary. Panhandle Eastern Pipe Line Co. No. 1 Stevenson, C section 24-29-36w, was drilling below 670 feet.

Stevens County

United Producing Co. No. 1 Beardsley, C N half section 12-31-35w, Hugoton district, Stevens County, was bottomed at 2,722 feet, acidized, shot and produced 3,700,000 feet of gas. Gas sand was topped at 2,610 feet.

Kuhn Brothers No. 1 Younggren, C SE section 32-32-38w, was building rig. Kansas Oil Corp. No. 1 Nix, C NW section 3-34-39w, was rigging up rotary.

Other First Reports

In Chase County, T. D. Duffy No. 1 well, NE NW NW section 26-22-9, was a rig.

In Coffey County, Preston & Hart No. 2 Kufahl, SW SE NW section 11-23-13, drilling below 825 feet.

In Cowley County, Ralph Wixson and others No. 1 Clover, C SE SE section 8-31-7e, was moving in machine; E. B. Shawver No. 1 Blood, NW NW SW section 2-30-4e, was a location; Earl Wakefield No. 2-A Wilson, NE NE NW section 4-32-3e, rig; E. B. Shawver No. 3 Brewer, SW SW SE section 5-34-3e, moving in material; Dickey No. 1 Dickey, NE cor. section 22-34-3e, location.

In Greenwood County, Henderson Oil Co. No. 1 Wilson, NW NW NE section 8-24-12, drilling below 620 feet.

In Barber County, J. A. Davis No. 1 Williams, SE SE NW section 30-31-11w, had dug ponds.

In Rooks County, Leavell Coal Co. No. 2 Baxa, C W half W half NW section 12-9-17w, an old well, was deepened from 3,355 feet to 3,459 feet and shut down. Same operator's No. 4 Baxa, NW cor. section 12-9-17w, had dug cellar.

In Sedgwick County, Steinbuchel and others No. 1 Werkler, NW cor. section 19-28-1e, was a location; Reeves & Kinner No. 1 Helm, SW cor. section 5-29-3w, was a rig; Prunty Production Co. and others No. 1 Black A, SW SW NW section 16-25-1e, set 10-inch casing at 191 feet.

In Sumner County, Magnolia Petroleum Co. No. 1 Schemmerhorn, C E half SW SW section 2-30-4w, had dug cellar; Hugh T. Jones and others No. 1 Stunkel, SE SE SW section 2-30-1w, wildcat, was a rig; Stelbar Oil Corp. No. 3 Barlow B, C W half W half SE section 33-31-1w, was rigging up rotary; Cameron and others No. 1 well, SW SE NE section 24-30-1w, was moving in material.

In Trego County, Carlock No. 1 Kinzel Estate, SW cor. section 9-13-22w, wildcat, had spudded and shut down.

Nebraska Wildcats

L. R. Page and others No. 1 Bonham, C SE SE section 31-1n-1e, Jefferson County, Nebraska, Siliceous lime test, based Dakota at 591 feet, Fort Riley 735 feet, Neva 1,045 feet; set 10-inch at 2,014 feet, had a hole

(Continued on Page 105)

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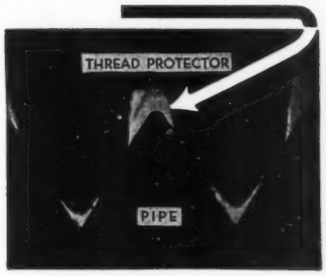

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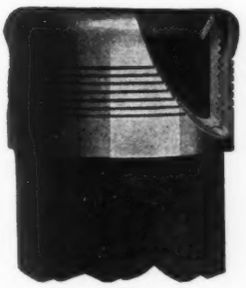

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Michigan Field Report

By O. C. PRESSPRICH

ELEVEN NEW BUCKEYE WELLS FLOW 5,700 BARRELS PER DAY

SAGINAW, Mich., Nov. 22.—With three leaders topping 1,000-bbl.-a-day production among a list of 11 wells drilled into pay in the Buckeye Township, Gladwin County, oil field the past week, more than 5,700 bbls. of crude was added to the potential daily production of Michigan's most prolific field as winter garbed oil fields in snow, adding impetus to drilling operations but forecasting hardships to come.

While Buckeye recorded 11 completions for the week, six other wells in scattered locations, all expected to extend the field, were due to hit pay this week. Completions not only exceeded those for many weeks, but showed a list of larger producers than for some time.

Production in other Michigan fields, some older and some more recent, was dwarfed by the week's showing in Buckeye. It not only bore out the feverish activity to bring in wells before winter's handicaps add to hazards of production and drilling, but indicated, through a large permit list, that new drilling will go forward through the winter and ahead with gusto next spring.

Trends noted from new producers, and also from permit lists, indicate the forecast to be reasonably safe that the north (Wicklund) pool eventually will extend to the east into Hay Township, where several favorable strikes have been made; that there will come a filling in of locations on which prospecting is awaited to prove up territory in the north area; that the south Buckeye (Oard) pool production is due to extend west and north to join the so-called midway pool, a proved production area, and also to extend south into Tobacco Township and southeast into Billings Township.

Topping the list of the week's wells is the natural producer, Sun Oil Co. No. 11 Rabb, NW SW NE section 10-18n-1w, Buckeye's north (Wicklund) pool, which came in with an initial of 1,600 bbls. daily. Close to this record of the week was the same company's No. 4 Luks, SW NW NE section 10-18n-1w, which ran 1,000 bbls. daily after acid treatment. Sun company holdings in section 10, pushing boundaries of the field westward, contrary to the previously accepted direction of development, have been unusually prolific.

The second high producer of the week, also in the north pool, was C. W. Teater No. 5 Adamets, NE SW SW section 12-18n-1w, which shot the gauge up to 1,100 bbls., natural flow. The Teater well is one of the westerly extensions in the north pool, and is close to the prolific Sun Oil Co. lease. All three big producers in the Buckeye field this past week were charted in the north field. Other completions were as follows: Sun Oil Co. No. 8 Rabb, SE NE NE section 10-18n-1w, a 150-bbl. natural producer, now being prepared for acid in hopes of improving the flow; Pence & King No. 1 Stahl, SW SE SW section 24-18n-1w, an eastern extension of the so-called midway field, which came in for 400 bbls. as an initial daily gauge.

One of the best new wells in the south (Oard) pool of Buckeye was Gordon Oil Co. No. 1-D State, SE NE NW section 35-18n-1w, which developed 300-bbl. daily, natural production. The Gordon-State well is a westerly extension of the south pool proper. It is in the north part of the section, near the Little Cedar River, and one of the most northwesterly developments in the section. Bell & Marks added another well to the connecting link between the midway pool and the south pool with their No. 1 Schember, NE NW NW section 26-18n-1w, which flowed 350 bbls. after acid. Gordon Oil Co. added two south pool producers in the southern section with its No. 3-C State, NE NW SE section 36-18n-1w, which came in after acid at 75 bbls. daily, and its No. 4 Roy Trego, NW SE NE section 35-18n-1w, a 125-bbl. producer after acid.

Another cementing link between the south (Oard) pool and the midway field was developed when F. O. Whitelow No. 4 Fritzwater, SW SE SE section 26-18n-1w, came in after acid with 400 bbls. daily flow.

Gordon Oil Co. No. 6-A State, SW SE NE section 36-18n-1w, a northern offset to its State C lease, encountered misfortune by drilling into a show of water, and was being plugged back.

Six Sun Oil Co. wells in the north Buckeye field were in various stages of near completion, and are due to make a showing this week. They are: No. 3 Luks, SE NW NE section 10-18n-1w, finished a fishing job, and drilling ahead of 3,645 feet; No. 7 Ockerman, NE NE SW section 10-18n-1w, hole full of oil, and preparing to acidize; No. 8 Ockerman, NW NW SE, section 10-18n-1w, drilling into pay sand; No. 7 Rabb, SE SE NW section 10-18n-1w, completing in Dundee; No. 10 Rabb, NE SW NE section 10-18n-1w, drilling in; No. 1 Shumway, SW NW SE section 24-18n-1w, midway pool, show of oil which went into water, and will be plugged back. C. W. Teater No. 4 Domokos, NW NW NW section 11-18n-1w, also was being completed this week.

Gladwin County—Secord Township

Hopes still continued to linger of another Gladwin County oil pool in Secord Township, where Whitehill, Clovis & Drury No. 1 Bosley, NE SE SE section 11-19n-1e, was still testing after acid with prospects of the well being placed on the pump this week. The show has been sufficient to indicate a small commercial producer in Gladwin's latest wildcat field.

Isabella County—Broomfield Township

Pure Oil Co. continued to dominate production in the Broowfield area by bringing in prolific producers. Pure No. 2 Skarritt, NE NE NE section 5-14n-6w, which was completed last week with an initial flow of 240 bbls. daily, was acidized and gauged a production of 1,100 bbls. daily. Pure No. 10 Willis, NE NE NW section 4-14n-6w, was due for rotary drilling.

Gratiot County—Emerson Township

Redman Oil Co. No. 1 Creaser, NE SW SE section 18-11n-2w, holding the hopes of a Gratiot County well, was drilling at the week-end at 3,221 feet, and was reported 20 feet in the Dundee limestone.

Gratiot County—Sherman Township

Only one producer was reported in the Sherman field the past week. It was Pure Oil Co. No. 7-B McClintic, SW NW SW section 33-15n-6w, which was completed for 50 bbls. daily initial production. The well probably will be acidized. Five other Sherman Township wells were in various stages of drilling.

Montcalm County—Crystal Township

J. W. McIntosh No. 1 Lott, NE SE SE section 11-10n-5w, was completed for a flow of 65 bbls. every two days. The well headed up, but no gas was reported. Other activity in the Crystal field was dormant.

Gas Well Turns to Water

Less than an hour after a new 3,000,000-foot gasser had been tied into distribution lines to relieve a threatened gas shortage for the city of Mount Pleasant, the well blew into water, which killed the flow, and ended hopes of relief from this new source.

The new well came in 6 miles north of Mount Pleasant November 14, and was boomed as an answer to the city's prayers for a new gas supply. Pipe gangs worked feverishly to tie in the new supply by running half a mile of pipe line to hook in with the Mount Pleasant-Clare distribution system. Their efforts were unavailing when the well blew into water.

Meanwhile Gas Corp. of Michigan had its worries to keep Mount Pleasant on gas heat. Delays in pipe shipments for construction of a 13-mile pipe line to Broomfield, where Consumers Power company plans to loan 100,000,000 cubic feet of its reserves, were causing added fears. About 4 of the 13 miles have been constructed. Arrival of zero weather before completion of the pipe line probably would create a serious situation.

New York-Pennsylvania Fields

COUDERSPORT, Pa., Nov. 22.—Another well was completed in the Woodhull field in Steuben County, New York, and a Potter County, Pennsylvania, test was abandoned for the highlights of the week in the New York-Pennsylvania Oriskany sand gas fields.

The latest Woodhull completion, thirteenth in the township since the opening of the field last May, was drilled by G. L. Cabot, Inc., on the C. Groves farm. It had an initial open flow of 3,700,000 feet from a total depth of 4,180 feet. The Oriskany was topped at 4,166 feet and the first gas was found at 4,168 feet. The initial rock pressure was recorded as 1,680 pounds.

French and others abandoned their test on the Mary Webster farm, Genesee Township, Potter County, Pennsylvania, after drilling to a depth of only 400 feet.

Pennsylvania Operations

Abandonment of the Mary Webster farm test cut the number of operations, including an idle location, in Potter County, to seven, three of which are drilling.

P. P. & L. Co. is drilling at 4,988 feet on the G. M. Whitman farm, Harrison Township; New York State Natural Gas Co., at 2,820 feet on the A. D. Marble farm, same township, and Ward Wasson, at 3,475 feet on the R. B. Hall farm, Genesee Township.

Potter Development Co. is rebuilding the rig on the Crawford estate test, down 6,062 feet, in Keating Township. This company has a fishing job at 5,674 feet in its test on the Haupt farm in West Branch Township. New York State Natural Gas Co. is shut down at 2,930 feet on the A. Schofield No. 2 farm (elevation 2,050 feet), Harrison Township, and G. L. Cabot, Inc., has yet to begin operations on the Orwin & Carlson farm location in Wharton Township.

Three of the four Warren County operations are drilling while Kane Industrial Gas Co. remains shut down at 4,435 feet on Lot 515, Watson Township. Drilling wells are: Updegraff, at 4,750 feet on the O. E. Erickson farm, Elk Township; Evjen and others, at 3,920 feet on the Dusenberry farm, Watson Township, and Belmont Quadrangle Drilling Co., at 3,470 feet on Lot 487 (elevation 1,642 feet), Pleasant Township.

New York Operations

One of the fifteen Woodhull field wells reached the Oriskany this week when the Hanley & Bird test on the J. Lobeck farm topped the pay sand at 4,110 feet and drilled 4 feet into the sand.

Status of other operations in this field at present follows:

Belmont Quadrangle Drilling Co. is drilling at 4,021 feet on the L. S. Johnson farm and has the rig up for another test on the John Allen farm.

Williamsport Oil & Gas Co. is shut down at 2,400 feet on the Della Lampson farm.

Southwestern Development Co. has a location on the J. Seeley farm, is drilling at 1,300 feet on the E. G. Husted farm and at 697 feet on the Earl Brown farm.

Hanley & Bird are drilling at 3,185 feet on the E. H. Ackerman No. 1 farm.

J. Becker is drilling at 2,325 feet on the Fred Sly farm.

(Continued on Page 99)

† "The Watcher of the Plains"—by Charles M. Russell

The Watcher of the Plains

The price of success is vigilance. He who would best serve his patron and himself is watchful of today—visionary of tomorrow. ☆ In every industry are companies whose watchfulness is expressed in building products of highest quality—in keeping abreast of every progressive change that will affect their customers' interest. Even as the lone sentinel of the plains kept unceasing vigilance against lurking dangers, so do these companies watch to see that in dollar value, in service and in performance their products are unexcelled. ☆ Such a company is Axelson, backed by forty-five years of vigilance. ☆ Axelson Manufacturing Company, P. O. Box 98, Vernon Station, Los Angeles. St. Louis. 50 Church Street, New York. Tulsa. Mid-Continent and Eastern Distributor: Frick-Reid Supply Corporation. Rocky Mountain Distributor: Great Northern Tool & Supply Company.

☆ ☆ ☆

†Charles M. Russell knew and loved the great West. In his bronze, "The Watcher of the Plains", he has portrayed a Blackfoot scout, Son of Sleeping Thunder, and an old friend. Seated on high country, his keen eyes catch every unusual thing that appears. He warns his people against danger from the White Man or beasts of prey. This is the first time that permission has been granted for reproduction of this bronze. A reproduction of this picture, suitable for framing, is available upon request.

AXELSON PUMPS AND SUCKER RODS

Rocky Mountain Area

By
T. R. INGRAM

EDGE WELL AT COOPER HAS HOURLY YIELD OF 112 BBLS.

DENVER, Colo., Nov. 22.—Colorado had two new operations reported, one in Routt County, and the other in Moffat County, and no completions. Important Coal Basin test in Pitkin County again is making hole.

The Sinclair-Wyoming Oil Co. No. 2-C Muskrat, was completed in the Muskrat field, Wyoming, for 24,000,000 of gas, extending the proven gas area. The Continental Oil Co. No. 5-B Schuricht, Lance Creek field, another well in the Minnelusa, made 516 bbls. initial through tubing, but is not yet a completion.

Ohio Oil Co. No. 16 Kirt, Dry Creek field, Montana, a flank well, was completed for 2,000,000 feet of gas in the Frontier after plugging back.

The Rimrock pool in Kevin-Sunburst was extended a mile to the south in the Vander Pas & Montgomery No. 1 Thumm, which pumped 200 bbls. high gravity oil.

NEW MEXICO

A feature of the week in southeastern New Mexico was the completion of a 112-bbl. an hour natural well at the northwest edge of the Cooper field, strengthening the belief that the area eventually may be linked with the Lynn pool 2 miles northwest.

The big well was the Republic Production Co. No. 1 Davis, SW cor. section 34-23-36. Top of lime pay was 3,572 feet, total depth 3,621 feet. It flowed 112 bbls. of oil in one hour through 1-inch choke on tubing, accompanied by 3,000,000 feet of gas.

In the Vacuum area, Texas Co. No. 1-L State, C SW NE section 1-18-34, showed more increases in oil yield when operators drilled to 4,464 feet in lime, where it was shut in for storage after flowing 157 bbls. of oil in the last five hours. A soft formation was reported in the bottom 11 feet. Gas volume remained at around 3,500,000 feet as the well was deepened. It extends the original Vacuum pool 3 miles south. The well is not listed as a completion.

Other completions in Lea County were as follows:

Culbertson & Irwin No. 3-A Humphrey, NE SW NE section 3-25-37, topped pay at 3,335 feet, total depth 3,433 feet, flowing 250 bbls. of oil in 22½ hours, with 750,000 feet of gas.

Repollo Oil Co. No. 1 Carter, SW SE NE section 9-24-37, had pay at 3,650 feet, was bottomed at 3,787 feet, plugged back to 3,660 feet, set packer at 3,040 feet and flowed 35 bbls. of oil in five hours.

Continental Oil Co. No. 1-B-6 Elliott, C NE SE section 6-22-37, found pay at 3,715 feet, total depth 3,783 feet. It flowed 65 bbls. of oil naturally in 22 hours; was acidized, flowed 52 bbls. in eight hours; reacidized and flowed 44 bbls. in 11 hours, with 280,000 feet of gas.

Bradley Oil Co. No. 1 Grizzell, C SW NE section 5-22-37, flowed 250 bbls. of oil in 16 hours after acidizing, with 2,000,000 feet of gas. Pay was topped at 3,656 feet, total depth 3,737 feet.

Amerada Petroleum Corp. No. 1 Hare, C SW SW section 33-21-37, found pay at 3,683 feet, total depth 3,760 feet, and flowed at the rate of 5 bbls. of oil an hour, with 175,000 feet of gas.

Skelly Oil Co. No. 2-H State, C E half NW NW section 25-20-36, was acidized and flowed 672 bbls. of oil in 12 hours from pay topped at 3,800 feet, total depth 3,850 feet.

Continental Oil Co. No. 4-A-14 Sanderson, C NE SE section 14-20-36, topped pay at 3,770 feet, total depth 3,856 feet, flowed 22 bbls. of 34-gravity oil an hour naturally and through choke, with 244,000 feet of gas.

Same company's No. 1-B-24 Reed, C SE SW section 24-20-36, flowed 66½ bbls. of oil naturally through choke, accompanied by 1,820,000 feet of gas. Pay was topped at 3,737 feet, total depth 3,861 feet.

Gulf Oil Corp. No. 1-B Shipp, C NW SW section 8-19-37, had pay at 3,925 feet, total depth 4,040 feet, and flowed 188 bbls. of oil in 18 hours with 378,000 feet of gas.

Two failures were recorded in southeastern Eddy County, giving a setback to exploration for Delaware production in that area.

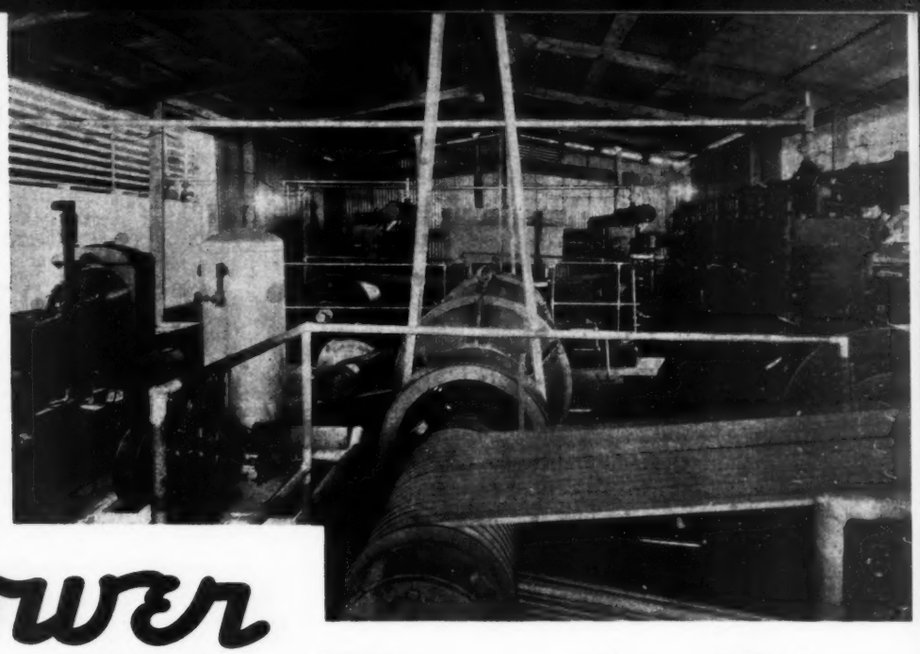
Weiner & McDowell No. 1 Kerr, C SE NW section 3-24-29, had sulfur water from 3,125 feet to 3,152 feet, total depth, and was ordered plugged. Delaware lime was topped at 3,460 feet.

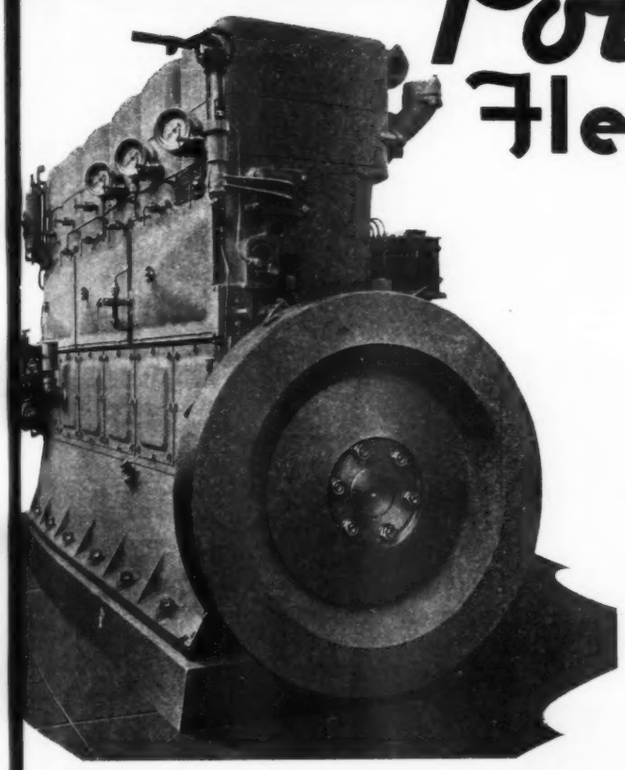
Western Gas Co. No. 1 Cagle, C NW NW section 8-26-30, wildcat, topped Delaware lime at 3,460 feet, had sulfur water from 3,590 feet to 3,638 feet, total depth, and was abandoned.

Lea County

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc.
Amerada Pet. Corp. No. 2 Corrigan, C S½ SE NE sec. 4-22-37. T.D. 315 ft.; set 10¾-in. 307 ft.
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,585 ft.; set 8-in. 2,573 ft.
Amerada Pet. Corp. No. 1 Stuart, C W½ NW NW sec. 14-25-37. T.D. 3,423 ft.; shot; F. 184 B.O. in 8 hrs.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,575 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,290 ft.
Anderson-Prichard Oil Corp. No. 3 Langlie, NE sec. 8-25-37. Drlg. 3,045 ft.
Atlantic Ref. Co. No. 1 Grizzell, C SE NE sec. 6-22-37. Loc.
Barnsdall Oil Co. No. 1 Whitten, NE NE NW sec. 4-24-36. Drlg.
Cities Service Oil Co. No. 8 Closson, C W½ NE sec. 6-22-36. T.D. 479 ft.; S.D. repairs.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Cities Service Oil Co. No. 1-A Closson, C NE NE sec. 18-22-36. Wildcat; T.D. 3,458 ft.; lost circulation.
Continental Oil Co. No. 2-B-6 Elliott, C NW SW sec. 6-22-37. T.D. 3,424 ft.; set 5½-in. csg. 3,416 ft.
Continental Oil Co. No. 3-B-6 Elliott, C SE SE sec. 6-22-37. T.D. 3,440 ft.; set 5½-in. 3,435 ft.
Continental Oil Co. No. 1-B-10 Britt, SW sec. 10-20-37. T.D. 3,890 ft.; acidized; 175,000 ft. gas; testing.
Continental Oil Co. No. 3-B-31 Lockhart, SE sec. 31-21-36. Drlg. 3,856 ft.
Continental Oil Co. No. 1-A Jack, C SW SW sec. 21-24-37. T.D. 3,507 ft.; swabbing.
Continental Oil Co. No. 2-B-24 Reed, SW sec. 24-20-36. Drlg. 2,645 ft.
Continental Oil Co. No. 5-A-14 Sanderson, NE NE NW sec. 14-20-36. T.D. 3,873 ft.; F. 44 B.O.P.H.; testing.
Continental Oil Co. No. 6-A-14 Sanderson, SE sec. 14-20-36. T.D. 3,759 ft.; set 5½-in. 3,756 ft.
Continental Oil Co. No. 1-A-7 State, SE sec. 7-19-37. Drlg. 3,640 ft.
Continental Oil Co. No. 2-E-17 State, C NE SE sec. 17-22-36. T.D. 306 ft.; S.D. for water.
Continental Oil Co. No. 6-A-17 State, C NW NE sec. 17-19-37. T.D. 1,478 ft.; set 7⅝-in. 1,470 ft.
Crandall, Osmond & Maxwell et al No. 1 Maxwell Permit, C SE SE sec. 2-11-36. Drlg. 5,162 ft.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 1 Alston, NW cor. sec. 26-25-37. Drlg. 690 ft.
Culbertson & Irwin No. 4-A Humphrey, NE SE NW sec. 3-25-37. Cellar and pits.
Eastland Oil Co. No. 1 Waldrop, C SE SE sec. 1-20-38. Drlg. 1,110 ft.
L. E. Elliott No. 1 Elliott, NE NE SE sec. 26-20-36. Cellar and pits.
Emperor Oil Co. No. 1 Johns, C SW NW sec. 24-17-32. T.D. 4,245 ft.; F. 10 B.O.P.D., 5,000,000 ft. gas.
Empire O. & R. Co. No. 1-G State, sec. 2-21-36. T.D. 3,900 ft.; S.D.
Empire O. & R. Co. No. 2-B State, C SE SW sec. 2-21-37. Drlg. 3,850 ft.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,665 ft.
Great Western Prod. Co. No. 1 State, C SE SE sec. 16-26-37. O.W.D.D.; drlg. 3,315 ft.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.
Gulf Oil Corp. No. 2 Cole, C NE NE sec. 16-22-37. T.D. 1,141 ft.; S.D.
Gulf Oil Corp. No. 1 Elliott, SW SE SE sec. 15-25-37. Drlg. 3,380 ft.
Gulf Oil Corp. No. 1-E Janda-State, NE NW NE sec. 21-23-36. T.D. 3,352 ft.; S.D. repairs.
Gulf Oil Corp. No. 1 LeMunyon, C NE NE sec. 28-23-37. Old well; drlg. 1,733 ft.
Gulf Oil Corp. No. 1-B Stebbins, NE sec. 5-22-37. T.D. 3,595 ft.; set 6⅝-in. 3,585 ft.
Gulf Oil Corp. No. 1 Felton, C SE SE sec. 28-21-36. T.D. 3,885 ft.; F. 436 B.O. in 21 hrs.; to reset packer; 9,000,000 ft. gas.
Gulf Oil Corp. No. 3 Stuart, C SE NE sec. 10-25-37. T.D. 226 ft.; set 12½-in. 252 ft.
Gulf Oil Corp. No. 1-B White, SE sec. 35-20-36. Drlg.
Herschback Oil Co. No. 1 Alexander, C NE SW sec. 5-21-37. T.D. 3,760 ft.; shot; F. 32 B.O. in 8 hrs.
Herschback Oil Co. No. 1 Burleson, C E½ NE NW sec. 8-25-37. T.D. 270 ft.; set 12½-in. 266 ft.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Humble O. & R. Co. No. 3 Fopeano, C SW SW sec. 25-20-36. Rigging up rotary.
Humble O. & R. Co. No. 2 Saunders, C NW NW sec. 9-22-34. T.D. 4,265 ft.; S.D.O.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.
Carl B. King No. 1 Stuart, NW SW SW sec. 11-25-37. Drlg. 3,073 ft.
Landreth Prod. Co. No. 2 Grizzell, C SW NE sec. 8-22-37. Drlg. 2,435 ft.
Harry Leonard No. 4 Lanehard, SW NW NE sec. 21-25-37. Drlg. 180 ft.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flw. 51 B.O. in 1 hr., naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NW SW sec. 23-17-34. T.D. 465 ft.; rigging up rotary.
J. A. Mascho No. 1 Cloyd, C SE SE sec. 20-22-33, wildcat. T.D. 3,516 ft.; S.D.O.
McDonald & Weiner No. 1 Elliott, SE cor. sec. 19-21-37. T.D. 3,778 ft.; flwd. 120 B.O.P.D.; T.P. 3,755 ft.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. Drlg. 3,278 ft.
Mid-Continent Pet. Corp. No. 2 Boren, C SE NE sec. 20-22-36. T.D. 3,862 ft.; tstg.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,653 ft.
Ohio Oil Co. No. 2 Grizzell, C NW SE sec. 5-22-37. T.D. 3,600 ft.; prep. to drill in.
Ohio Oil Co. No. 1 Hardy, NE NE SE sec. 20-21-37. T.D. 3,500 ft.; set 7-in. 3,491 ft.
Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,535 ft.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Lem Peters No. 1 Graham, sec. 27-22-37. Drlg. 720 ft.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Plains Prod. Co. No. 1 Stuart, NE SW SW sec. 10-25-37. T.D. 3,408 ft.; fishing.
Repollo Oil Co. No. 1 Powhatan Carter, SW SW NE sec. 9-24-37. Drlg. 375 ft.
Repollo Oil Co. No. 3 Christmas, NW NW NE sec. 28-22-37. Drlg. 1,560 ft.
Repollo Oil Co. No. 1 Cowden, NE cor. sec. 31-23-37. T.D. 3,850 ft.; plugging back.
Repollo Oil Co. No. 3 Moseley, SW sec. 34-24-37. Drlg. 2,200 ft.
Repollo Oil Co. No. 4 Roach, NW NW SW sec. 21-20-37. T.D. 3,875 ft.; P.B. 3,860 ft.; shot; cleaning out.
Repollo Oil Co. No. 1-B State, NE NE NW sec. 7-22-36. Drlg. 1,036 ft.
Repollo Oil Co. No. 1 Turner, sec. 29-21-37. Drlg. 3,225 ft.
Rowan Drlg. Co. No. 2 Elliott B, C NW NW sec. 9-22-37. Drlg. 2,785 ft.
Rowan Drlg. Co. No. 2-A Elliott, C NE NW sec. 27-22-37. Drlg.
Rushwold Oil Co. No. 1 Mattix, NE sec. 10-24-37. Drlg.
Samedan Oil Co. No. 3 Hughes, sec. 4-23-27. T.D. 3,631 ft.
Samedan Oil Co. No. 4 Hughes, C NW SE sec. 10-23-37. Drlg. 3,280 ft.
Shell Pet. Corp. No. 3 Black, SE SE SW sec. 21-24-37. Drlg. 3,512 ft.
Shell Pet. Corp. and Devonian Oil Co. No. 3 Christmas, C SW NE sec. 21-22-36. T.D. 3,855 ft.; P.B. 3,840 ft.; S.D.O.
Shell Pet. Corp. No. 2-L Endura-State, NE SE SE sec. 1-21-35. Loc.
Shell Pet. Corp. No. 2 Rinewalt, NW sec. 4-22-37. T.D. 3,760 ft.; acidized; flwd. 143 B.O. in 16 hrs.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,777 ft.
Shell Pet. Corp. No. 4-J State, SE cor. sec. 32-20-37. Loc.
Skelly Oil Co. No. 1-J State, C NE NW sec. 31-17-35. Loc.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.
Skelly Oil Co. No. 1 Combest, NW NW SE sec. 27-23-36. T.D. 3,636 ft.; swbg.
Skelly Oil Co. No. 1 E. T. Johns, SW sec. 21-24-37. T.D. 1,173 ft.; set 9⅝-in. 1,170 ft.
Skelly Oil Co. No. 2 Mon-State, C NE SE sec. 13-19-36. Drlg. 3,630 ft.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,622 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flw. 452 bbls. in 24 hrs.
Skelly Oil Co. No. 2 W. P. Sims, C SE NE sec. 10-23-37. T.D. 3,352 ft.; set 7-in. 3,332 ft.
Stanolind O. & G. Co. No. 29-B Farnsworth, C SW NW sec. 7-26-37. Drlg. 2,621 ft.
Stanolind O. & G. Co. No. 10-A Gilluly, SE SE NE sec. 24-20-36. T.D. 3,760 ft.; acidized.
Stanolind O. & G. Co. No. 11-A Gilluly, C SW NE sec. 24-20-36. T.D. 3,871 ft.; acidized; flwd. 5 B.O.P.H.
Stanolind O. & G. Co. No. 2-A Langlie, C NW SW sec. 9-25-37. T.D. 3,463 ft.; swb. 48 B.O. in 8 hrs.; tstg.
Stanolind O. & G. Co. No. 1-A Hill, C NW SE sec. 6-21-37. T.D. 298 ft.; set 13-in. csg.
Stanolind O. & G. Co. No. 1-B Hill, NE sec. 6-21-37. T.D. 3,522 ft.; set 7-in. 3,506 ft.
Stanolind O. & G. Co. No. 2-B Langlie, C NW NW sec. 15-25-37. T.D. 3,458 ft.; P.B. 3,147 ft.; S.I.
Stanolind O. & G. Co. No. 2-A Myers, C SW SW sec. 15-24-37. M.I.M.
Stanolind O. & G. Co. No. 3-A Myers, C SW SE sec. 22-24-37. T.D. 3,580 ft.; flwd. 15 B.O.P.H.
Stanolind O. & G. Co. No. 1 State, C SE SE sec. 2-21-36. T.D. 3,854 ft.; flwd. 7½ B.O. in 24 hrs.; to pmp.
Stanolind O. & G. Co. No. 1 Thompson, NE sec. 6-21-27. Drlg. 1,065 ft.
W. H. Street No. 2 Wood, C SW NE sec. 22-22-37. T.D. 3,692 ft.; flwd. 44 B.O.P.D.; tbg.: S.D.O.
Sun Oil Co. No. 2 Lanehart, C NE SE sec. 20-25-37. R.U.R.

Three ATLAS DIESELS Power Flexible Electric Rig

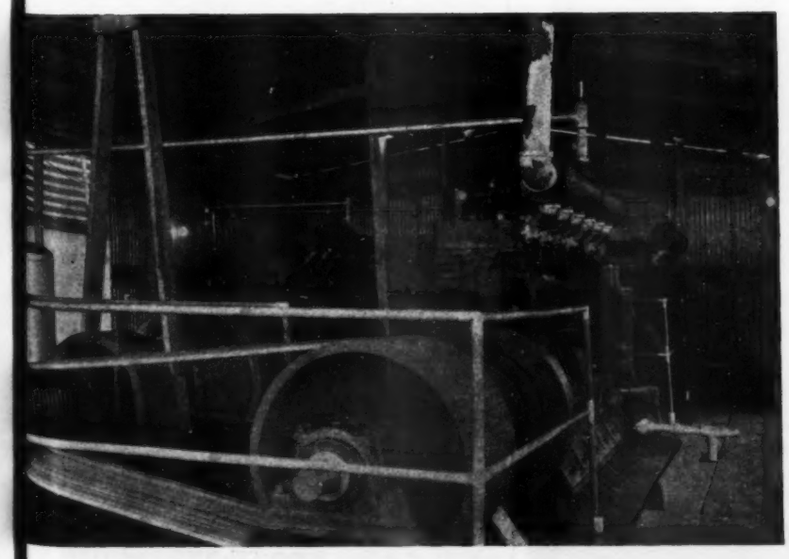




The Atlas Diesel Electric Drilling Rig shown here, and said to be the most powerful and flexible yet put on the market, is owned by the Noble Drilling Company and drilled its first hole near Ardmore, Oklahoma.

Three 240 H.P. Atlas Imperial Drilling Diesels of the enclosed type, developing their rated horsepower at 514 R.P.M., are V-belt connected to one 150 KW and one 240 KW, direct current, 350 volt Allis-Chalmers generators turning at 1200 R.P.M. Two separately driven 25 KW exciters are used, one V-belt connected to the main generator shaft, the other driven by a gasoline engine, the arrangement providing light and auxiliary power when rigging up and during down time on the main plant. The auxiliary generating unit is also used to start the engines electrically by means of a special winding in each generator.

The drilling motor is an Allis-Chalmers developing 400 H.P. at 1000 R.P.M. It is direct connected to a Falk reduction gear which is connected to the drawworks by roller chain. The two mud pumps are driven by 225 H.P. motors. The generators are differential compound wound with separately excited field winding, and a series winding differentially connected to the shunt winding, which gives a drooping voltage when the motor torque increases and a rising voltage when the motor torque decreases. This characteristic is equivalent to an infinite number of automatically changing gear ratios between the engine and the drawworks, permitting the motor to accelerate and hoist the maximum loads without stalling the engines.



The flexibility of this rig cannot be duplicated by steam or any other mechanical drive system, where the driller is continually in doubt as to what gear ratio to use. This doubt results in loss of time and subjects the entire rig to excessive strains which result in breakage and attendant down time.

Besides its great flexibility this arrangement is also very economical. It eliminates the water problem incident to an undeveloped area, and it is cheaper to use a small amount of fuel oil than large volumes of high pressure gas. May we tell you more about this rig or about Diesel drilling in general? Your inquiries are solicited and given prompt attention.

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MacCLATCHIE MUD PUMP VALVES:
THE WORLD'S LARGEST SELLING PUMP VALVES

A leadership founded on highest quality & greatest economy

The "STREAMLINED"

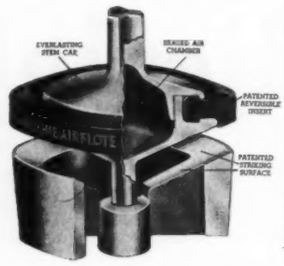
MacClatchie Streamlined Valves are recognized as the standard of the industry. Their streamlined construction gives unobstructed fluid flow entirely free of lodging areas to collect and impair the proper closing of the valve. All of the cross bar and a large part of the seat forms a streamlined striking surface. This large metal striking surface—40% greater than ordinary valves—absorbs the entire blow of the valve and assures longer life without hammered out spots to throw valve out of alignment.

The patented valve rubbers are reversible, giving double life to every rubber.

The "AIRFLOTE"

The Airflote is a fundamentally new type of valve engineered for today's deep wells and high circulating pressures. A built-in sealed air chamber gives greater buoyancy, less fluid slippage, more efficient valve action and greatly reduced impact. In air the valve is approximately 20% lighter than other types of the same corresponding size. The reduced weight improves the efficiency and life of the valve by reducing destructive hammering and increasing the sensitivity of the valve to slight changes in fluid movements.

The air chamber is sealed with a large diameter tool joint thread that shoulders to give great strength and rigidity and prevents it from leaking or unscrewing in service. The valve only has three parts—valve body, cap and insert. As there is practically no wear on the cap it can be used over and over again, giving longer life and cutting the maintenance cost.



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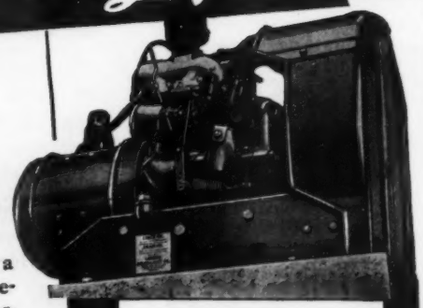

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Texas Co. No. 1 American National, C NE NW sec. 18-19-37. Drlg. 915 ft.
Texas Co. No. 2 Fristoe, NW NE NE sec. 3-25-37. Drlg. 2,150 ft.
Texas Co. No. 2-B State, SE sec. 16-23-36. Drlg. 3,527 ft.
Texas Co. No. 6-C State, NE sec. 19-20-37. Drlg. 3,570 ft.
Texas Co. No. 1-L State, C SW NE sec. 1-18-34. Drlg. 4,443 ft.
Texas Co. No. 2 Falvy, C NW NW sec. 8-22-37. T.D. 3,592 ft.; fsg.
Two States Oil Co. No. 1 Morris, SW SE SE sec. 21-18-38. Drlg. 3,775 ft.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. T.D. 3,880 ft.; S.D.O.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-27. T.D. 560 ft.; rng. csg.
Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. R.U. and S.D.
Fred Brainerd No. 2 Brainerd, sec. 5-18-27. T.D. 1,824 ft.; shot; flwd. 25 B.O.P.D.; tstg.
Ed Bryant No. 1 Stebbins, C NE SW sec. 19-20-29. T.D. 1,000 ft.; S.D.O.
Carper Drlg. Co. No. 2 Gissler, SW SE NW sec. 23-17-30. T.D. 3,510 ft.; sulfur wtr.; S.D.O.
Danciger O. & R. Co. No .3 Turner, SW NE SW sec. 18-17-31. T.D. 3,154 ft.; rng. csg.
D. & B. Oil Co. No. 2 Jenkins, SW NW NW sec. 20-17-30. Drlg. 1,750 ft.
Emperor Oil Co. No. 3 Puckett, C NE NW sec. 24-17-31. T.D. 3,908 ft.; swb. 60 B.O.P.D.; acidized.
Etz Bros. No. 4 State, C S½ SE SE sec. 16-17-30. T.D. 2,505 ft.; waiting on csg.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; drlg. 3,300 ft.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,800 ft.
Franklin Pet. Corp. No. 1 McIntyre, NE NW SW sec. 20-17-30. Drlg. 2,015 ft.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. Drlg. 680 ft.
F. W. & Y. Oil Co. No. 6-A Gissler, NE sec. 23-17-30. Drlg. 3,130 ft.
F. W. & Y. Oil Co. No. 7-A Gissler, NE sec. 23-17-30. Drlg. 3,276 ft.
F. W. & Y. Oil Co. No. 1-B Gissler, SW sec. 14-17-30. Loc.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Geo. F. Getty, Inc., No. 1-E State, NE SW SW sec. 16-17-31. Drlg. 1,850 ft.
Grayburg Oil Co. No. 9 Burch, SW NE NE sec. 19-17-30. Drlg. 2,828 ft.
Grayburg Oil Co. No. 10 Burch, SE NE NE sec. 19-17-30. Drlg. 260 ft.
Grayburg Oil Co. No. 4 Keely, SE sec. 24-17-9. Loc.
M. A. Grisham No. 1 Chaytor, NE sec. 10-24-26. Drlg. 825 ft.
H. A. Hartwell No. 1 Vandagriff, NE NE SE sec. 8-18-27. Loc.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 455 ft.; S.D.
Woodworth Hawkins No. 1 Mack, C SW SW sec. 20-24-27. T.D. 335 ft.; rng. csg.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,310 ft.; S.D.O.
Nash-Windfohr & Brown No. 4-A Jackson, NE sec. 13-17-30. T.D. 3,541 ft.; shot; swb. 100 B.O.P.D.
Nash-Windfohr & Brown No. 5-A Jackson, NE sec. 13-17-30. Drlg. 3,280 ft.
Nash-Windfohr & Brown No. 6-A Jackson, SE sec. 13-17-30. T.D. 2,980 ft.; drlg. plug.
Nash-Windfohr & Brown No. 7-A Jackson, SE sec. 13-17-30. Drlg. 3,177 ft.
Nash-Windfohr & Brown No. 2-B Stevens, NW sec. 13-17-30. Rig.
W. A. Nichols No. 1 Johnson, NE sec. 35-16-21. Wildcat; T.D. 3,697 ft.; pmp. 20 B.O.P.D.; top sd. 3,690 ft.; to deepen.
Red Gulch Oil Co. No. 1 State, C S½ SE SE sec. 4-17-28. Drlg. 800 ft.
Repollo Oil Co. No. 2-D McIntyre, NW NE SW sec. 20-17-30. T.D. 3,280 ft.; tstg.
Repollo Oil Co. No. 3-D McIntyre, SE cor. sec. 17-17-30. Cellar and pits.
Repollo Oil Co. No. 1-A Parke, NW NE NE sec. 22-17-30. Drlg. 840 ft.
Repollo Oil Co. No. 2 West, SW SE SE sec. 9-17-31. Drlg. 1,765 ft.
Paul Sargent No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31. Drlg. 3,510 ft.; 1,700 ft. O.I.H.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. Drlg. 2,170 ft.

Chaves County

English & Hamon No. 11 Billingslea, SE sec. 9-15-29. T.D. 3,654 ft.; 3,300 ft. wtr.; S.D.O.
E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. T.D. 140 ft.; S.D.O.
Mathieson et al No. 1 Cole, C NE NW sec. 19-15-27. Drlg. 835 ft.

Curry County

Bond & Harrison No. 1 Hart ranch, C NW SE sec. 13-2n-31. T.D. 3,258 ft.; S.D.O.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-27e. O.W. prep. to deepen from 5,850 ft.

Dona Ana County

Juels C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

George Mulvey No. 1 State, SW cor. sec. 11-25-8. T.D. 263 ft.; S.D.
Fred Turner No. 1 Evans, NW NW SW sec. 22-25-12. O.W.D.D.; wildcat; T.D. 3,763 ft.; S.D.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. Drlg. 360 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 19-11n-4e. S.D. 3,750 ft. for csg.

McKinley County

Guarantee Oil Co. No. 1 fee, NW NW NW sec. 31-20n-9w. S.D. 327 ft.
S. Dysart et al No. 1 Bouton, CEL NW NE sec. 14-14n-10w. T.D. 1,390 ft.; re-ran 12½-in. to 1,320 ft. and S.D.

San Juan County

Continental Oil Co. No. 66, SE NW NE sec. 2-29n-19w. Drlg. 390 ft.
Jack Amenda No. 4 Hart, NW NE SW sec. 25-30n-12w. S.D. 2,048 ft.
Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. Drlg. below 1,000 ft.

Socorro County

Central New Mexico Oil Co. No. 1 Brown, SE NW sec. 16-3n-1e. Drlg. 1,250 ft.

Valencia County

C. A. Brober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. S.D. 900 ft.; chge. to rotary.
Big Three Oil Co. No. 1 Dailes Townsite, SE SE NW sec. 5-6n-1e. T.D. 6,001 ft.; cg. 5,970 ft. in new hole; S.G.

COLORADO

Adams County

Oklahoma Oil Co. No. 1 Baxter, C SW sec. 2-3s-66w. S.D. 4,555 ft.
Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. S.D. 4,345 ft.

Archuleta County

Prospect Oil Synd. No. 2 Lena M. Garnett, NW SW NE sec. 13-33n-2e. T.D. 290 ft.; rng. 10-in.

Boulder County

J. B. Furstenberg No. 1 Foote, SE sec. 20-1n-70w. Drlg. 2,752 ft.
Boulder Prod. & Ref. Co. No. 11 Harlow Est., SE NE sec. 36-2n-71w. S.D.O. 765 ft.; dry in Muddy.

Cheyenne County

Rig is reported moved away from Brittell Oil, Inc., No. 1 Seip, C NE SW section 26-12n-47w, north central line of Cheyenne County. This operation was started in January, 1936. Total depth of hole is reported 100 feet.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE sec. 36-7s-88w. Drlg. 705 ft. in sh. and L.; not yet in Big L.

Huerfano County

S. W. Pressey No. 1 Ojo, SW NE sec. 10-29s-69w. T.D. 3,550 ft.; cmtg. caves.
S. W. Pressey No. 2 Alamo, C SW SE sec. 3-27n-68w. Setting csg. at 450 ft.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. S.D. 2,230 ft.

Jackson County

Colorado Oil Ref. Co. No. 1 North Park Coal, NW NW sec. 18-9n-78w. S.D. 3,015 ft.

LaPlata County

N. Spatter No. 1 Bryce, SE SW SW sec. 31-33n-9w. Landed 10-in. at 800 ft.; drlg. ahead.

Larimer County

Great West O. & G. Corp. No. 1 Haworth, C SW SE sec. 16-4n-69w. T.D. 3,880 ft.; P.B. to 3,865 ft.: swbg. and tstg.

Las Animas County

Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61w. Drlg. 2,100 ft.; O.W.D.D. from 1,816 ft.

Lincoln County

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. T.D. 2,860 ft.; fsg.; parted 8¼-in.
Gulf Oil Corp. No. 1 Smith, C SW SE sec. 19-15s-53w. Cg. 6,548 ft.

Logan County

Transylvania Dev. Co. No. 1 Sheldon, SE NW SE sec. 3-10n-55w. Dk. up. (Cor. loc.)

Mesa County

Midwest Drlg. & Dev. Co. No. 1 Callahan, NE NW SE sec. 30-8s-97w. T.D. 3,337 ft.; fsg.; increase in S.G. and brownish-green oil; installed new line and prep. to go to Dakotas.
Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. Cmtd. 13⅜-in. at 630 ft. with 480 sacks and S.D. for winter.

Moffat County

C. R. Privett has made a location for his No. 1 Privett, NE NE SW section 1-5n-96w, in the Dry Lake district, 15 miles to the northwest of the Iles field. Drilling will start as soon as some holes in the block are leased up.

Morapas Pet. Co. No. 1 Coles, SW SW SE sec. 1-3n-92w. T.D. 2,670 ft.; rng. 8¼-in.
Kerr-Lynn Drlg. Co. No. 1 Denise, C SE SE sec. 19-9n-99w. T.D. 3,005 ft.; fshg. parted csg.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW sec. 31-36n-17w. T.D. 3,830 ft.; rmg. at 3,790 ft. to set 4½-in. on bttm.; making about 3 B.P.D. 45-grav. oil; 830 ft. in Penn.

Park County

South Park Oil Co. No. 1 State, SE SE SW sec. 16-11s-75w. S.D. 5,705 ft. for winter.
South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. sh. 5,360 ft.; consid. oil in hole.

Pitkin County

The Glenco Development Co. No. 1 Government, in the Coal Basin district, one of the important regional tests in western Colorado, has resumed drilling after straightening up hole and company taking over contract. Water was shut off with the 10-inch at 1,040 feet and it is now drilling in the Mancos shale at 1,400 feet. It will test the Frontier, the sands in the Dakota series and the Morrison and probably will go to the Sundance.

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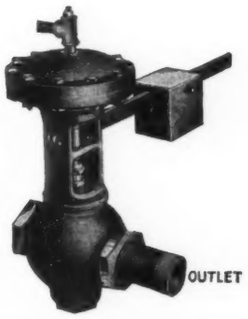

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Glenco Dev. Co. No. 1 Govt., NW cor. sec. 9-10s-89w. Drlg. 1,400 ft.

Pueblo County

Ed Solomon No. 1 Smith, E½ sec. 11-21s-60w. Bldg. rig.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW sec. 16-1n-91w. S.D. 2,135 ft.; M.I. 8¼-in.
Texas Co. and California Co. No. 1 Unit, SW SE NW sec. 35-3n-94w. Cg. Dakota at 6,241 ft.

Routt County

The Major Oil Reserve of Colorado, Inc., is moving in materials for a well in the SW NW section 17-6n-86w, in the Tow Creek field. This is a state lease which is offset by three producers of the Texas Co. An unusual feature of the operation is that death has followed in the wake of former attempts to produce the lease. Roy A. Sharp, who made a deal for the acreage negotiated with the estates of C. C. Double, F. H. Oliver and Harry Hynds, all of whom died after attempting to develop the lease. After acquiring their interests, a new 10-year lease was granted on 560 acres by the State Land Board. Sharp turned 400 acres out of the tract to the drilling company.

Major Oil Reserve No. 1 State, SW NW sec. 17-6n-86w. M.I.M.; (first report).
Craig & Moore No. 1 Erwin, C SW NE sec. 33-7n-85w. R.U.C.T.; will spd. Thanksgiving day.

WYOMING

Albany County

Murphy Oil Co. No. 11 Holst, NE SW NE sec. 13-17n-77w. Spdg.
Wyco Oil Co., Inc., No. 3 Chappel, NE NE NW sec. 33-21n-76w. Drlg. 1,625 ft.; gas in Wall Creek 685-711 ft. not tstd.
Ohio Oil Co. No. 2 Griffin, SW SE SW sec. 2-21n-77w. Drlg. 1,853 ft.
Murphy Oil Co. No. 2 Holst-Woolf, NE NW NW sec. 19-17n-76w. Drlg. 2,315 ft.

Big Horn County

Ohio Oil Co. No. 3 Sidon Canal, NW SW (Lot 40), sec. 24-56n-97w. Loc.; W.O. rig.
Joan Oil Co. No. 1 Howell, sec. 32-55n-97w (Lot 63). S.D. 2,150 ft. for 10-in.
Peay Oil Co. No. 1 Denio, Tr. 43-C, sec. 15-55n-97w. S.D. 3,930 ft.

Campbell County

Powder River O. & G. Co. No. 1 Rhodes, NE SE SW sec. 24-49n-74w. S.D. 650 ft.

Carbon County

Ohio Oil Co. No. 13 Harrison & Cooper, SW SE SW sec. 35-20n-78w. Drlg. 70 ft.
Superior Oil Co. No. 1 Christensen, NW NW NW sec. 7-12n-92w. Drlg. 1,570 ft. in Wasatch; started cg. at 1,100 ft.; 12½-in. at 373 ft.; 300-ft. sat.
Ohio Oil Co. No. 2 Union Pacific, SW SW SE sec. 17-21n-80w. Drlg.
Ohio Oil Co. No. 1 Brimmer, SE SE SE sec. 32-27n-89w. T.D. 1,475 ft.; cmtd. cave; drlg. pig.; top Shannon 1,446 ft.; (cor. loc.).
Ohio Oil Co.-California Co. No. 4-B Kyle, C SW SW sec. 24-21n-79w. W.O. rig.
Ohio Oil Co.-California Co. No. 6 Union Pacific-Johnson, C SW SE sec. 23-21n-79w. Spdg.
Sinclair-Wyoming Oil Co. No. 11 Wertz, SE NW NW sec. 7-26n-89w. T.D. 5,987 ft.; swbg. 162 bbls. in 24 hrs. with packer at 5,958 ft.; tstg.
Producers Oil Co. No. 1 CNL sec. 14-20s-88w. Drlg. 194 ft.
Ohio Oil Co.-California Co. No. 5 Cronberg-U. P., C NW NW sec. 25-21-79w. S.D.O. 5,765 ft.
Ohio Oil Co.-California Co. No. 3-A Kyle, C SW NE sec. 26-21n-79w. T.D. 5,748 ft.; P.B. to 5,606 ft.; swbg. and tstg.; making 10 B.P.H.
Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78w. S.D. 2,347 ft.

Converse County

D. D. Gray No. 1 Lane, SW SE SE sec. 22-32n-69w. M.I.M.
Kaufman & Quinlan Bros. No. 1 Lane, SE NW NE sec. 27-32n-69w. Loc. (first report).
John T. Coffee, Jr., No. 1 Mary Gaspar, NW NW SW sec. 25-32n-69w. S.D. 265 ft.
Ainsworth Oil Co. No. 1 Marberger, NE SE NE sec. 34-32n-69w. Drlg. 350 ft.
Hall-Thornton et al No. 1 Roth, C NW SE sec. 13-32n-69w. S.D. 467 ft. repairs; 8¼-in. at 397 ft.
Wyoming Southern Oil Co. No. 1 Lane, C NW NE sec. 27-32n-69w. Spd. and S.D.
Elbe Oil Ld. & Dev. Co. No. 1 Benham, NW NE sec. 5-31-70w. M.I.M.
Tom Carney No. 1 Beaver, SE SE SW sec. 28-35n-68w. Some material on loc.
New Era Fuel Co. No. 1 Jones, SE SE SE sec. 21-32n-69w. Drlg. 498 ft.
Chadron-Osage Oil Co. No. 1 State, SW cor. sec. 16-32n-69w. T.D. 4,060 ft.; cmtd. 8¼-in. at 4,040 ft; W.O.C.
Wyoming-Southern Oil Co. No. 3 Salisbury, NE NE SE sec. 27-32n-69w. T.D. 603 ft.; recmtd. 6⅝-in at 568 ft.

Fremont County

The Sinclair-Wyoming Oil Co. No. 2-C Muskrat, NE SW SW section 1-33n-92w, in the Muskrat gas field, a deep test to the Madison, was completed in the Lakota sand for 24,000,000 feet of gas per day, open flow. It marks an extension of the gas area about 1½ miles to the southeast in a fault block. The hole was drilled to the Madison at a total depth of 8,112 feet, where the drill pipe became stuck. It then plugged back into the 7-inch at 7,265 feet and perforated casing opposite the gas sand at 5,440-43 feet. It had water in the Sundance at 5,935-6,188 feet. It had some oil with water in the Embar. No shows were encountered in the Frontier.

Three tests have been drilled on the structure in three separate fault blocks. The discovery was completed in 1928 in the NW SE SE section 34-34n-92w at 4,340 feet in the Frontier for 75,000,000 feet of gas per day. The second well drilled in the west fault block in the NW SE NW section 33-34n-92w was abandoned at 4,810 feet after testing the Frontier.

Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. Drlg. sdy. sh. 4,433 ft.
Consolidated Oil Properties No. 3, C SW SE sec. 16-1n-1w. Spdg.
H. Kenyon Burch No. 1 Enos, CEL NE NE sec. 28-3n-1w. S.D.O. 970 ft.; no shows.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. S.D. 875 ft.
Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. Drlg. 3,178 ft.

Hot Springs County

Italo Pet. Corp. No. 1 Phebus-Govt., NW NW SW sec. 11-44n-98w. Drlg. 2,250 ft.
Oscar B. Grace No. 4 Govt., CNL SE NW sec. 21-43n-92w. T.D. 380 ft.; fsg. bailer.
J. W. Bales No. 1 Govt., CWL SE SW sec. 28-43n-93w. M.I.M. for test to Madison in Red Springs dist. (first report).

Lincoln County

H. M. Eller et al No. 4 Govt., SE NW SW sec. 32-19n-116w. T.D. 401 ft.; will test S.O. in lenticular sd. at 397-401 ft.
Place Oil Co. No. 1 Davis, SE SE SE sec. 9-26n-11w. T.D. 1,228 ft.; set pipe on top sat. zone at 1,212 ft.; tstg.

Natrona County

Stanolind O. & G. Co. No. 26 Wyo. Asso.-T.P.-35, C SE NW sec. 35-40n-79w. Loc. (first report).
Stanolind O. & G. Co. No. 26 Wyo. Assoc.-T.P.-26, C SE SW sec. 26-40-79w. Loc. (first report).
Stanolind O. & G. Co. No. 8 Wyo. Assoc.-T.P.-35. Cellar and pits (first report).
Stanolind O. & G. Co. No. 11 Wyo. Asso.-Tensleep, C NE NW sec. 35-40n-79w. T.D. 4,043 ft.; cmtd. 6⅝-in. at 4,032 ft.; perf. pipe to tst.
Stanolind O. & G. Co. No. 29 Wyo. Assoc.-Tensleep, C SW SW sec. 26-40n-79w. Drlg. 4,083 ft.; top Tensleep 3,908 ft.
General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. Drlg. 4,000 ft.
Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78w. Res.; drlg. 745 ft.
Stanolind O. & G. Co. No. 11 Wyo. Asso.-T.P.-35, C NE SW sec. 35-40n-79w. T.D. 158 ft.; lost cir.

Niobrara County

The Continental Oil Co. No. 5-B Schuricht, C SW SW section 5-35n-65w, Lance Creek field, which was noncommercial in the Sundance horizon, is a near completion as a good well in the Minnelusa at a total depth of 5,273 feet. It is on the southwest side of the field and half a mile east of the Cobb-Holly No. 2 Novick, a flank well, which made 94 bbls. per hour in the Minnelusa, the best well in the field in the deeper horizon. The Schuricht well is about 60 feet higher on the Minnelusa, which topped saturation at 5,020 feet. It made 516 bbls. in 24 hours through the tubing, but has not yet been tested through the casing and is not yet listed as a completion.

Ohio Oil Co. No. 8 Converse Sheep, NE SE SW sec. 32-36n-65w. M.I.M.
Ohio Oil Co. No. 2 Cash OPC-5, NW NW NE sec. 4-35n-65w. Spdg.
Continental Oil Co. No. 6-B Schuricht, SW SW SE sec. 6-35n-65w. Drlg. 1,098 ft.; cmtd. 13⅜-in. at 413 ft. with 400 sacks.
J. M. Huber Corp. No. 1 H. & M., NE NE NE sec. 8-35n-65w. W.O. rig.
J. M. Huber Corp. No. 1 Joss, NE SE NW sec. 6-35n-65w. T.P. 4,096 ft.; O.W.D.D.; M.I.R.
Lewis Goekel No. 1, NE SE NW sec. 31-35n-62e. Resumed drlg. 1,550 ft.
Minnelusa Oil Co. No. 3 Joss, NE NE SW sec. 6-35n-65w. T.D. 3,152 ft.; cmtd. pipe 702 ft.; redrlg. 2,127 ft.
Continental Oil Co. No. 3 Apex-1, SE SE NE sec. 34-36n-65w. T.D. 5,480 ft.; drlg. by D.P.
W. A. Maupin et al No. 1 Berggren, NW sec. 23-35n-63w. Drlg. 180 ft.
Minnelusa Oil Co. No. 1-A Lamb, NE SE SW sec. 27-36n-65w. S.D. 5,412 ft. to str. titles; Minnelusa heavily sat.
Continental Oil Co. No. 5-B Schuricht, C SW SW sec. 5-35n-65w. T.D. 5,273 ft.; tstg.
Ohio Oil Co. No. 2 Leo-O.P.C., NE NE SE sec. 35-36n-65w. R.U.R.
Ohio Oil Co. No. 1 Leo-O.P.C.-7, NW NW SE sec. 35-36n-65w. T.D. 5,641 ft.; to test on pump.
Continental Oil Co. No. 1 Leach, SW NE NE sec. 29-36n-64w. Drlg. 6,100 ft.
Continental Oil Co. No. 8 Otto Rohlff, SW SW SE sec. 31-36n-65w. Cg. 5,201 ft.; top Minnelusa 5,133 ft.
MacKinnie Oil & Dev. Co. No. 2 Thompson, NW NW NE sec. 7-35n-65w. Drlg. r.b. 4,342 ft.; to r.b. 4,144 ft.

Park County

Resolute Oil Co. No. 1 Northern Pacific, C NE NW sec. 21-57n-101w. Drlg. 7,915 ft. in upper Frontier.
Resolute Oil Co. No. 1 Govt., C NE NE sec. 20-57n-101w. T.D. 8,670 ft.; shot with 500 qts. at 8,585-8,628 ft.; tstg.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. Drlg. 2,415 ft.; C.D.

Sublette County

Texas Co. No. 4-I, SW NE SW sec. 27-27n-113w. Drlg. 625 ft.

Sweetwater County

Mountain Fuel Supply Co. No. 1 Hay, NE SE NW sec. 2-19n-110w. Drlg. 1,576 ft.
Italo Pet. Corp. No. 1 Govt., SW SW SW sec. 36-13n-95w. S.D. 610 ft.
Sinclair-Wyoming Oil Co. No. 77, SE NE NE sec. 10-26n-90w. Drlg. 2,818 ft.
Mountain Fuel Supply Co. No. 1 Union Pacific, C SW SE sec. 13-17n-104w. T.D. 3,330 ft.; P.B. to 3,241 ft.; S.D. for winter.
Mountain Fuel Supply Co. No. 1 Williams, C NE NE sec. 5-12n-95w. T.D. 5,680 ft.; P.B. to 5,382 ft.; W.O.C.

Mountain Fuel Supply Co. No. 1 Union Pacific, C SE NE sec. 29-15n-104w, S. of Baxter Basin. Loc.

Uinta County

E. A. Ottman et al No. 1 Govt., C SE NW sec. 26-14n-110w. Drlg. 1,230 ft.; slight S.O.

Weston County

Osage Trust Co. No. 27, C NW SE sec. 14-46n-64w. R.U.C.T.
Osage Trust Co. No. 28, C NE SW sec. 14-46n-64w. Loc.
Chas. F. Martens No. 8, SW SW NW sec. 24-36n-64w. Loc. (first report).
Osage Trust Co. No. 1, SE NW NE sec. 22-46n-64w. R.U.C.T.
Bradley-Manewal Oil Co. No. 7, CWL NE NE sec. 20-46n-63w. R.O.G.; (first report).
Federal Oil Co. No. 9, CNL SE SE sec. 15-46n-64w. R.O.G. (first report).
Chas. Goodell et al No. 1 State, C NE NE sec. 23-44n-63w. Rdy. to spd.
John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. S.D. 1,850 ft.; repairs.
Sisty et al No. 1 Carmine, SE SW sec. 31-44n-62w. Drlg. 755 ft.
Le Faivre Oil Synd. No. 1 Martin, NW NW SW sec. 29-45n-68w. Drlg. 2,550 ft.; will U.R. 10-in. at 2,130 ft. for wtr. S.O.
Giles & Proutt No. 1 Govt., CEL SW NE sec. 29-45n-61w. Spdg. 30 ft.

MONTANA

Big Horn County

P. O. Oil & Gas Co. No. 1, NW NE NE sec. 25-9s-35e. T.D. 288 ft.; fshg. (first report).
E. L. Dana No. 1 Hardy, SW NW sec. 22-9s-35e. S.D. 700 ft.

Carbon County

The Ohio Oil Co. No. 16 Kirt, C SE SE section 4-7s-21e, Dry Creek field, was completed in the Frontier at 4,760-4,813 feet for 2,000,000 feet of gas per day through tubing after plugging back from 5,976 feet to 4,950 feet and perforating the casing opposite the pay. The Dakota and Lakota were dry. Location is on the northwest flank of the structure. It is a diagonal offset on the northwest to No. 14 Maddox which made 352 bbls. initial from the Dakota, and is half a mile south of No. 11 Bowman, which made 150 bbls. initial.

R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-10e. Drlg. 340 ft.
Miracle Oil Co. No. 2, CWL NE SE sec. 3-6s-23e. Drlg. 1,580 ft. in Kootenai.
Geo. Muth et al No. 1, CSL SE SE sec. 23-6s-23e. S.D. indef. at 1,500 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW sec. 35-9s-23e. S.D. 1,626 ft. for 8¼-in.; top Frontier 1,608 ft.; small S.O.
Shaw-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. Drlg. sh. 1,780 ft.; top first Frontier 1,660 ft.

Choteau County

Security Pet. Co. No. 1 Johnson, NE sec. 23-26n-3e. S.D. 1,700 ft.

Cascade County

C. Leonard Smith No. 1-A Smith-Schwingle, NE NE SW sec. 14-22n-2e. T.D. 750 ft.; fsg. tools.

Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW sec. 10-36n-50e. Drlg. 1,671 ft.; prep to run 10-in.

Fergus County

Baugham & Singley No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 300 ft. in Quadrant; 10-in. at 20 ft.; 8¼-in. at 200 ft. (first report).
Lewistown Oil Co. No. 1 Parks, C NE NE sec. 13-15n-18e. Drlg. 1,200 ft.; 10-in. at 360 ft.; 8¼-in. at 690 ft.
East Crest Oil Co. No. 1 Brakke, NW SE SW sec. 14-15n-19e. Drlg. 496 ft. in Quadrant; 10-in. at 356 ft. (formerly Sam Phillips).
White Top O. & G. Co. No. 1 Govt., C NE SW sec. 35-14n-19e. T.D. 1,150 ft.; fshg.; 8¼-in. 730 ft.; S.O. 880 ft.

Glacier County

There were no completions or new operations in the Cut Bank area and drilling is down to two wells, only one of which is in the field proper. The Texas Co. No. 8 Tribal-122, SW SE section 6-32n-5w, reported a completion, but not tested, last week, pumped 60 bbls. in 24 hours.

A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. Drlg. 2,510 ft.
B. V. Hole No. 3 All.-124, SE SW SE sec. 1-32n-6w. Drlg. 2,990 ft.

Hill County

W. E. Drought No. 1, SE NW SE sec. 29-32n-16e. Drlg. 560 ft. in Eagle sd. (first report).

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. T.D. 1,750 ft.; prep to set 5⅞-in. on top Madison at 1,746 ft.

Lewis and Clark County

Lewis & Clark Oil Synd. No. 1 Lewis & Clark, NW NW SW sec. 11-18n-5w. R.U.C.T.; contr. to Wm. Hanlon.
Lewis & Clark Oil Synd. No. 1 Pathfinder, CNL NW SE sec. 29-18n-4w. Loc.
Lewis & Clark Oil Synd. No. 1 Sacajawea, SE NE NE sec. 5-17n-4w. Loc.; prob. not drill this year.

Park County

Ben W. Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. Drlg. 1,250 ft.; S.G. at 1,100 ft.

Petroleum County

O. B. Canfield No. 2 Govt., SE SE NE sec. 21-17n-24e. Drlg. 750 ft.; set 5⅞-in. for W.S.O.

Roosevelt County

John W. Schmidt et al No. 1 Freu, NW NW NE sec. 21-28n-50w. T.D. 1,400 ft.; S.G. through H.F.W.; ran csg.; W.O.C.

Toole County

There were three completions in the Kevin-Sunburst field, one of which was a dry hole and another an important extension. There was only one new operation.

Vander Pas & Montgomery No. 1 Thumm, NW SW NW section 33-35n-3w, on the west side of the field and what is known locally as the Rimrock pool, was completed at 1,710 feet in the contact at 1,695 feet, and is pumping 200 bbls. per day of 38.6-gravity oil with practically no sulfur content. It is about a mile south of the nearest producer in the Rimrock district. Before acidizing with 500 gallons it made only one bailer of oil. Three wells completed in the south half of section 29 in the past few months made from 35 to 200 bbls. initially.

The Big West Oil Co. No. 6 McDonald, SW SE SW section 19-35n-2w, made 7 bbls. per day initially after acidizing from the contact at 1,508-16 feet.

New Era Fuel Co. No. 3 Goeddertz, C SE SW sec. 12-35n-3w. Drlg. 140 ft. (first report).
Wm. McKnight No. 4 Gunderson, NE NE NW sec. 19-35n-2w. Drlg. 1,540 ft.
Big West Oil Co. No. 7 McDonald, NW NE NE sec. 19-35n-2w. Drlg. 1,540 ft.
Scotland No. 2 McNamar, CNL NW SW sec. 29-35n-3w. T.D. 1,000 ft.; rng. 8-in. (first report).
Ohio Oil Co. No. 2 Sunburst, C NE NE sec. 12-32n-2w. Drlg. 1,420 ft.
Hannah-Porter Co. No. 2 Benjamin, CWL SE SW sec. 18-33n-1w. T.D. 1,188 ft.; cmtd. 7-in.; W.O.C.
56 Pet. Co. No. 1 Davidson, SE SE NW sec. 26-35n-4w. T.D. 2,080 ft.; contact 2,073 ft.; 6 bailers O. and 3 bbls. W.; acid. 500 gals.; tstg.
Welch Bros. No. 2 Ward, SW SE NE sec. 29-35n-3w. Drlg. 1,650 ft.
Plotke & Rader No. 11 Fryberger, NW SE SE sec. 29-35n-3w. Drlg. 1,630 ft.
Hamilton & Hamilton No. 4 Reeg, SE SW SE sec. 14-35n-2w. S.D. 450 ft.
Guy Smith No. 1 Govt., C NE SE sec. 35-36n-3w. Spd. 10 ft. and S.D.
C. T. Oien No. 7 Engemoen, C NW NW sec. 14-35n-2w. T.D. 1,607 ft.; contact 1,591 ft.
C. L. Tomlinson No. 1 Davidson, NW NE SE sec. 28-35n-3w. Drlg. 1,735 ft.
E. O. Reickhoff No. 3 Baum, SW SW SE sec. 3-35n-3w. S.D. 10 ft.
Bryant Bros. No. 1 Lashbaugh, NE SW NW sec. 34-25n-2w. T.D. 850 ft.; R.U. heavier mach. to resume.

Outside Kevin-Sunburst

Montana Gas Corp. No. 2 Clark, C SE SW sec. 24-37n-1w. T.D. 2,103 ft.; cmtd. 8¼-in. top gas sd. at 2,103 ft.; W.O.C.

Yellowstone County

Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. Drlg. 1,540 ft.; S. O. and G. at 1,400 ft.
Broadview Dome Oil Co. No. 1, NE NE SW sec. 18-3n-23e. Drlg. 3,400 ft. in r.b.; S.O. and G. 3,395 ft.
Lauriel Oil Co. No. 1, C NW SW sec. 7-2s-24e. Drlg. Colo. sh. 180 ft.

UTAH

Daggett County

Mountain Fuel Supply Co. No. 1 Smith, C SW NE sec. 20-3n-24e. T.D. 5,674 ft.; 6¾-in. at 5,603 ft.; drlg. plg.
Mountain Fuel Supply Co. No. 3-B Murphy, NW NW SW sec. 23-3n-24e. Rig up.

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. S.D. 6,715 ft.; M.I. heavier rotary equip.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. Drlg. 2,326 ft.
Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. Drlg. 700 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. Res. drlg. 2,430 ft.

NEBRASKA

Sioux County

J. M. Huber Corp. and United Producers, Inc., No. 1 Morgan, C SW SW sec. 32-35n-56e. S.D. 3,257 ft.; r.b.

Jefferson County

L. R. Page et al No. 1 Bonham, C SE SE sec. 1-1n-1e. Drlg. 2,300 ft.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96w. Drlg. 1,497 ft.

New York-Pennsylvania Fields

(Continued from Page 92)

Cunningham Natural Gas Co. is shut down at 3,958 feet on the J. J. Johnson farm.

New York State Natural Gas Co. is drilling at 1,740 feet on the Chester L. Bonham farm and at 950 feet on the Charles Finch farm.

Sylvania Corp. is drilling at 662 feet on the John Allen farm (elevation 1,591 feet), and at 755 feet on the E. G. Husted farm.

Chancy and others are drilling at 225 feet on the M. Hargraves farm.

New York State Natural Gas Co. has spudded in its second Troupsburg Township, Steuben County, test. This test is on the Franklin Miller farm (elevation 1,805 feet). The first test, on the A. Schaul farm, is drilling at 3,920 feet.

Two wells are preparing to drill in Allegany County where Southwestern Development Co. has the rig up on the Johnson estate farm (elevation 2,015 feet), Willing Township, and Empire Producing Co. is moving in material on the Della Mulvey farm (elevation 2,077 feet), Alma Township.

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North Louisiana, Arkansas

IMPORTANT OUTPOSTS NEAR CRISIS IN TRI-STATE DISTRICT

SHREVEPORT, La., Nov. 22.—The Schuler field in Union County, Arkansas, and wildcats in Columbia County, Arkansas, share attention with a test in the Jefferson end of the Rodessa field in Marion County, Texas.

The Alice Sidney Oil Co. in its No. 2 Morgan, NE SE section 18-18-17, Schuler field, was at a total depth of 7,700 feet and getting ready to set casing on bottom. It topped Permian lime at 7,632 feet. When casing is set a formation test will be made. Edwin M. Jones No. 2 Marine, NW SE section 17-18-17, was coring below 7,650 feet. It topped the sand in the Lower Marine at 7,632 feet. Phillips Petroleum Co. No. 1 Ed Gan, SE NE section 18-18-17, found good saturation in cores from 7,530 to 7,604 feet and was coring below 7,650 feet. Four other wells are drilling to the Lower Marine recently discovered by Edwin M. Jones. The oil from the discovery well is taken by the Root Petroleum Co., which has run over 60,000 bbls. of the oil in the past six weeks. Jones stores about 2,000 bbls. a day of the oil because of a lack of market.

In Columbia County, Kerr Lynn Oil Co. No. 1 Barnett, SW NE section 14-17-20, was coring at 5,800 feet after having logged some saturation. Tide Water Associated Oil Co. and Seaboard Oil Co. No. 1 Crumpler in section 17-24-19 was below 7,525 feet, after topping anhydrite at 7,500 feet. Standard Oil Co. of Louisiana No. 1 J. P. McKean, SW SW section 8-16-22, which ran into salt water at 7,309 feet, was plugged back to 7,257 feet and was being tested.

Over on the Texas side of the Rodessa field, Holcomb & Thomason No. 15 Henderson in the Ewing Survey in Marion County, one-half mile from the nearest production is near the critical point which will prove whether or not it will extend the pool. It is half a mile from the Arkansas Louisiana Gas Co. No. 1 Neilon in the Gillespie Survey, which came in as a 320-bbl. initial producer through a quarter-inch choke, from a total depth of 5,996 feet.

Fohs Oil Co. staked location for No. 1 Kemper, Bennington Survey, 555 feet west of southeast corner and 186 feet north of south line of 30-acre tract. It will offset on the south the George Barham No. 1 Whitfield, Bennington Survey. The Fohs Oil Co. No. 1 Neilon was scheduled to begin drilling plugs Saturday in production string cemented at 6,074 feet with hole bottomed at 6,090 feet. Operators cored saturation in the Henderson at 6,067-80 feet with top at 6,053 feet and saturation in the Gloyd at 6,084-90 feet with top 6,074 feet.

Heyser, Heard & Clardy No. 1 Henderson, bottomed at 6,030 feet, has been testing several days. The firm cleared site for No. 2 Henderson, one location south of the Gulf No. 2 Henderson in the Bennington Survey.

Midway between the producing districts, H. B. Turner No. 1 Scuddy, Hanks Survey, was below 2,000 feet and slated to run mid-string over the week-end, while two locations southwest of production in the Lodi district, Gulf No. 1 Grubaugh, Coy Survey, was below 2,890 feet. Arkansas Louisiana No. 2 Wade Houston was past 2,410 feet, while Mid-Continent, which was testing No. 4 Sory at 6,082 feet, had derrick up for No. 5.

Rodessa, Louisiana, Completions

Magnolia Petroleum Co. No. 4 Mary S. Atkins, section 7-23-15, estimated 10,000,000 feet of gas daily. Plugged-back total depth 5,900 feet.

Rodessa, Texas, Completions

George Barham No. 1 Whitfield, R. Bennington Survey, flowing 21 bbls. hourly through one-quarter inch tubing choke. Plugged-back total depth 6,090 feet.

Fohs Oil Co. No. 2 Mary McReynolds, A. D. S. Coy Survey, gauged 6,359,000 feet of gas, open flow, total depth 6,014 feet.

Arkansas-Louisiana Gas Co. No. 1 Neilon. Thomas Gillespie Survey, flowed 135 bbls. in six hours through three-quarters inch tubing choke after using 1,500 gallons of acid, total depth 5,996 feet.

Fohs Oil Co. No. 3 Mary McReynolds, A. D. S. Coy Survey, flowed 215 bbls. in 24 hours through one-quarter inch tubing choke, total depth 6,149 feet.

Union Producing Co. No. 5 Hutchinson, A. D. S. Coy Survey, flowed 16 bbls. hourly through one-quarter inch tubing choke, total depth 6,092 feet.

All the above wells are in Marion County.

Rodessa, Arkansas, Completions

F. W. Burford No. 4 Ahern, section 10-20-28, flowed 150 bbls. daily through 1-inch tubing choke after using 3,000 gallons of acid, total depth 6,067 feet.

F. W. Burford No. 1-A J. O. Gerrald, section 15-20-28, flowed 646 bbls. in 21 hours through three-quarters inch tubing choke, total depth 6,070 feet.

McClanahan and others No. 4-A Capps, section 11-20-28, flowed 50 bbls. daily by heads through open tubing, total depth 6,075 feet.

McClanahan and others No. 1 T. J. Hopkins, section 11-20-28, flowed 15 bbls. hourly through 1-inch tubing choke, total depth 6,150 feet.

LOUISIANA

Caddo Parish

A. R. Hancock No. 1 Helpman, section 16-21-16, pumping 35 bbls. daily, total depth 1,010 feet.

Louisiana Oil Producing Co. No. 11-B Muslow, section 4-20-15, pumping 20 bbls. daily, total depth 2,220 feet.

G. W. Montgomery Caddo Levee Board No. 1, section 11-19-15, tested salt water and was abandoned at total depth of 2,395 feet.

Frank Perkins No. 2-A Stiles, section 23-21-16, pumping 100 bbls. daily, total depth 1,870 feet.

Sam M. Richardson No. 1 Sentell, section 9-19-14, pumping 20 bbls. daily, total depth 2,460 feet.

Simplex Oil Co. No. 12 Glassell, section 10-20-15, pumping 20 bbls. daily, total depth 2,195 feet.

Claiborne Parish

Union Producing Co. No. 1 Treadwell-Hawk, section 6-19-5, tested estimated 15,000,000 feet gas, total depth 5,751 feet.

Lisbon

Trippett Drilling Co. No. 2 C. S. L. Patton, section 1-20-5, flowed 487 bbls. in eight hours through one-half inch tubing choke after using 5,000 gallons of acid, total depth 5,335 feet.

De Soto Parish

W. T. Coleman No. 1 Prudhomme, section 29-12-11, gauged 9,000,000 feet gas on initial test, total depth 2,755 feet.

La Salle Parish

T & J, Inc., No. 1 Tullos, section 26-10-1e, pumping 20 bbls. daily, total depth 1,530 feet.

Lincoln Parish

E. H. Moore, Inc., No. 1 Arcadia Commercial Bank, section 22-18-5w, tested dry and abandoned at a depth of 6,210 feet.

Sabine Parish

Major Oil Co. No. 1 Graham, section 19-9-13, flowed 35 bbls. daily after using 1,500 gallons of acid, total depth 1,710 feet.

Union Parish

J & H Oil Co. No. 6-C Union Power, section 16-21-3e, gauged 1,000,000 feet of gas on initial test, rock pressure 995 pounds, total depth 2,265 feet.

Webster Parish

Magnolia Petroleum Co. No. 4 Aarnes-Cox, section 22-21-10, tested 709 bbls. of distillate and 3,000,000 feet of gas in 24 hours through one-half inch tubing choke, total depth 8,423 feet.

Winn Parish

Georgetown Oil Co. No. 1 Odom, section 36-11-1w, was dry and abandoned at a depth of 1,640 feet.

Columbia County, Arkansas

Standard Oil Co. of Louisiana No. 1 J. P. McKean, section 8-16-22, was drilled to a depth of 7,309 feet and showed some salt water. Plugged back to 7,258 feet. Swabbed well and it flowed 468 bbls. of oil in 24 hours.

Miller County

Odel Hinson No. 1 Montana Realty Co., section 3-17-28, tested salt water and was abandoned at a depth of 5,150 feet. The previous depth was 5,325 feet.

EAST TEXAS (Border Counties)

Harrison County

The shallow Waskom oil and gas field in southeastern Harrison County is soon to receive its first Trinity test, as Arkansas-Louisiana Gas Co. is rigging up for the drilling of No. 1 Carey M. Abney in the E. Little Survey, a proposed 10,000-foot test into the Lower Marine Trinity. Formerly this structure has produced both oil and gas from the Tokio sand at about 2,100 feet.

Panola County

Danciger Oil & Refining Co. No. 1 Tatum, wildcat test in the Bissell Survey, encountered a hole full of salt water after perforating from 5,253-63 feet in what was thought to be a saturated sand. Operators are plugging off bottom water and will test higher levels.

Estimated Daily Production

Estimated daily average production in the week ending November 20, 1937:

NORTH LOUISIANA

Bellevue	810
Caddo light	3,910
Caddo heavy	2,685
Converse	635
Cotton Valley heavy	370
Cotton Valley light	*3,210
De Soto and Red River	1,450
Elm Grove	380
Haynesville	3,005
Holly	105
Homer	2,435
Lisbon	6,450
Pleasant Hill	120
Rodessa	45,230
Sarepta-Carterville	310
Sligo	180
Sugar Creek	360
Urania	2,780
Zwolle	635
Total	75,060

SOUTH ARKANSAS

Champagnolle	1,326
El Dorado	1,930
Lisbon	285
Miller County	440
Nevada	740
Rodessa	12,530
Schuler	7,000
Smackover light	2,100
Smackover heavy	16,770
Stephens	580
Troy	1,150
Urbana	1,225
Total	46,070

Texas side of Rodessa field, 22,599 bbls. daily.
*2,735 bbls. is distillate.

West and North Texas

By MITCHELL TUCKER

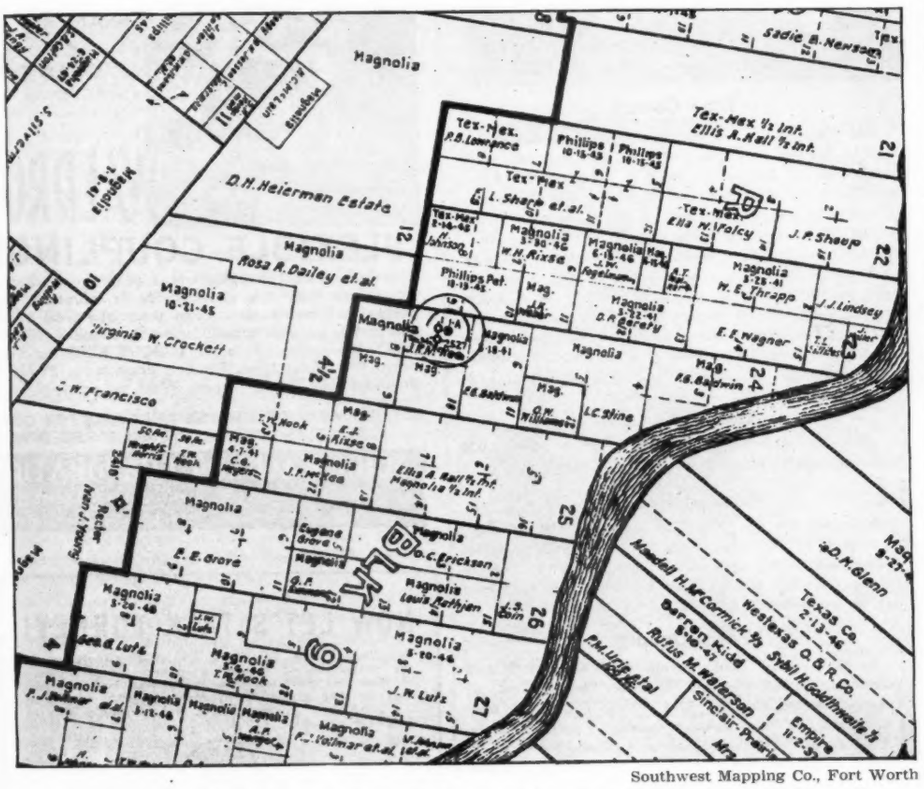
ORDOVICIAN TEST IN PECOS CHECKS HIGH ON STRUCTURE

FORT WORTH, Tex., Nov. 22.—Five new wildcat locations in West Texas last week, one each in Andrews, Martin, Menard, Pecos and Nolan counties, indicated a continuation of exploratory activity in that large basin area. During the past seven days 53 oil wells were completed in proven and semiproven territory, and two wildcats abandoned.

Principal interest remains with Magnolia's deep Ordovician possibility in northern Pecos County. Situated in what is known as the Imperial area, a short distance west of the Pecos River, Magnolia Petroleum Co. and others No. 1 McKee is reliably reported to be checking after encountering an impossible job. Magnolia obtained some 6,500 acres from the Tex-Mex company in consideration of drilling the present test well. Royalty and lease values have doubled and trebled following the penetration of the Simpson lime at this supposed favorable position.

New Shallow Prospect

All indications continue favorable for a new shallow field opener in eastern Culberson County on the Caldwell ranch. C. A. Jarrett and others No. 1 C. M. Caldwell, C SW half section 15, Block 100, P.S.L. Survey, at a



Southwest Mapping Co., Fort Worth

Area surrounding Magnolia Petroleum Co.'s promising Ordovician prospect in northwestern Pecos County, which is preparing to core ahead at a depth of 4,914 feet in the Simpson lime, after topping this horizon about 800 feet higher than nearby deep tests

over 800 feet higher on top of the Simpson lime (Middle Ordovician) when correlated with nearest deep tests in the area, and considerably higher than other wells greater distances away. The McKee test topped the Simpson at 4,775 feet, which on subsea calculations is 870 feet higher than Gulf Oil Corp.'s famous No. 5 Waddell in western Crane County 12 miles to the north, which definitely proved Ordovician possibilities in the basin by flowing 8,180 bbls. daily on flush range. Correlating this well with Humble Oil & Refining Co. No. 1 White & Baker, Ordovician test 40 miles to the southeast, it is running over 2,000 feet higher. Total depth of the test is now 4,914 feet, and work is temporarily suspended while titles are checked and drill pipe size reduced from 6- to 4-inch. They are now preparing to core ahead.

The Tex-Mex Petroleum Co. originally blocked this area and drilled a test well to 2,720 feet and junked it at total depth of 523 feet, has a hole full of 41-gravity "sweet" oil with small amounts of gas. From 490 to 505 feet about 100,000 feet of gas was gauged, and an oil-bearing sand, thought to be the Rustler, was penetrated from 507 to 509 feet. The oil rose 100 feet in 20 minutes and as bailing continued the fluid level remained rather constant. Drilling from 509 to 523 feet did not increase production. The ultimate importance of this shallow strike is somewhat discounted by the fact that other wells in the region nearby have reported small shows in the past which proved to be noncommercial. Bailing and testing of this possible field opener is to continue for a thorough check of its potentialities.

In southern Yoakum County two completions were made in the new Denver field, bringing total producers there to five. Six outpost tests have been staked in semiproven territory surrounding the Denver field. American Liberty Oil Co. No. 1 Claywater, J. H. Gibson Survey, topped pay at 5,020 feet and at a depth of 5,083 feet flowed 225 bbls. per day through 2-inch tubing after acidizing in two stages. Gas-oil ratio tested 1,079 to 1. Nearby, J. W. Murchison and others No. 1 Elliott, total depth 5,070 feet, sand topped 4,955 feet, and packer set 4,698 feet, flowed 235 bbls. daily.

Southwest of the Denver field, J. L. Green No. 1 Nevels, wildcat test in section 709, Block D, found the Denver pay dry at a depth of 5,501 feet, and has been abandoned.

Gas-Oil Ratio Surveys for West Texas Fields

The Texas Railroad Commission has authorized and ordered that immediate gas-oil ratio surveys be made in the North Cowden, Goldsmith, Kermit, Keystone, Penwell, South Ward, North Ward and Estes oil fields in western Texas.

CENTRAL AND NORTH TEXAS

Deep sand exploration in the K.M.A. field in Wichita County continues to head active development in the North Texas district. The Texas Railroad Commission will hold a formal hearing at Wichita Falls November 30 to consider rules for the regulation and spacing in this field and its several extensions. As the week closed there were 11 new locations staked or rigging up and 37 drilling wells, all having the new 4,000-foot pay sand as their objective. Large lease trades feature the K.M.A. activity as both majors and independents alike are seeking properties in the semiproven territory. Blackwell Oil & Gas Co. entered the area by purchasing a 160-acre tract in the W. H. Spillers Survey, paying a reported price of $85,000 in cash and $225,000 in oil.

In Fisher County, West Central Texas, 11 wells are drilling and 5 rigging up in the Rotan field. Two outposts at Rotan, one to the northeast and one northwest of production, are due to reach the sand next week. Their successful completion will serve to stimulate an active drilling campaign. The Shell Pipe Line Co. is reported to be considering discontinuing the acceptance of crude runs from both the Rotan and Howard pools of Fisher County, their only pipe line outlet at present. Rumors of plans for a refinery in the area are persistent.

Gov. E. W. Marland of Oklahoma, together with the Drake Drilling Co., are preparing to drill a deep test about 3 miles southwest of Sweetwater, Nolan County, on the block originally assembled by C. E. Hyde and associates. Location is to be in section 65, Block 21, T.&P. Survey.

PANHANDLE DISTRICT

Twenty completions were recorded in the Panhandle district last week, 19 of which were oil wells with an aggregate initial potential after shot of about 10,000 bbls. The one gasser gauged 10,846,000 feet. At present 20 wildcat tests, either as possible extensions to producing structures, or as deep exploratory tests on wildcat blocks, are drilling in the Panhandle district. There are 175 drilling wells or rigs up in this district.

The map of the K. M. A. district on Page 73 of The Oil and Gas Journal of November 4 was furnished by the Heydrick Mapping Co. of Wichita Falls.

PANHANDLE COMPLETIONS

Carson County

Hagy, Harrington & Marsh No. 1 Bednorz, gas rock 2,500-2,720 feet, gauged 10,846,000 feet. Skelly Oil Co. No. 89 Schaffer, oil sand 3,040-3,120 feet, 733 bbls. per day after shot.

Gray County

Cities Service Co. No. 13 Culler, 3,185-3,255 feet, 406 bbls. per day after shot. Kewanee Oil Co. No. 7 McKinney, 3,185-3,280 feet, 685 bbls. daily after shot. Stano-

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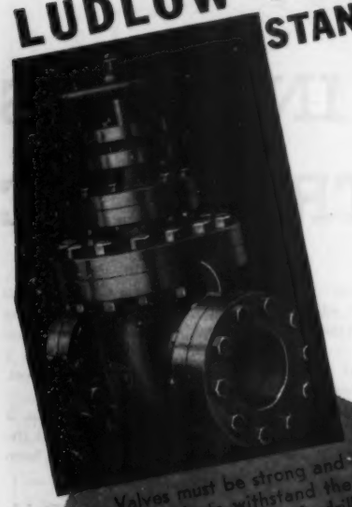

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lind Oil & Gas Co. No. 5 Merten, 3,232-70 feet, 685 bbls. after shot; No. 7 Kinzer, 3,266-3,305 feet, 320 bbls. daily after shot; No. 4 Binkley, 3,175-93 feet, 300 bbls. daily after shot. Plains Holding Co. No. 3 Chapman, 2,640-60 feet, 475 bbls. daily. Kewanee Oil & Gas No. 12 Arnold, 3,162-3,260 feet, 542 bbls. after shot. Cities Service Co. No. 3 Worley, 3,124-46 feet, 420 bbls. daily after shot; No. 12 Hughey B, 3,206-72 feet, 750 bbls. after shot; No. 7 Archer C, 3,178-3,266 feet, 705 bbls. daily after shot.

Hutchinson County

Stanolind Oil & Gas No. 7 Haile B, 3,030-57 feet, 350 bbls. after shot. Dolomite Production Co. No. 3 Perkins, 2,973-3,028 feet, 610 bbls. after shot. Alma Oil Co. No. 1 Whittenburg, 3,015-35 feet, 556 bbls. after acidizing. J. Gordon Burch No. 1 Herring, 3,135-40 feet and 3,175-96 feet, 540 bbls. after shot. S. & M. Oil Co. No. 8 Moore-Langdon, 3,030-3,115 feet, 460 bbls. after shot. Simpson Oil Co. No. 2 Terry, 3,055-90 feet, 424 bbls. after shot. Phillips Petroleum Co. No. 25 Cockrell Ranch, 2,920-3,022 feet, 790 bbls. after shot. Stanolind Oil & Gas No. 7 Terry, 2,906-50 feet, 540 bbls. after shot.

WEST TEXAS COMPLETIONS

Andrews County

Landreth Production Co. No. 2 L. Jones, 4,460-72 feet, 717 bbls. per day. Sun Oil Co. No. 1 Gowles, 4,465-82 feet, 182 bbls. daily.

Crane County

Snowden-McSweeney No. 2 Union, 3,500-64 feet, 386 bbls. Gulf No. 10 Henderson, Waddell area, 3,550-71 feet, flowed 7,048 bbls. per day after acid, open casing.

Ector County

In the Foster area, Barnsdall Oil Co. No. 5 Foster, 4,209-4,300 feet, 615 bbls. per day; No. 2 Johnson, 4,152-4,290 feet, 515 bbls. daily; No. 6 H. Foster, 4,222-72 feet, 620 bbls. per day. Skelly-Atlantic No. 1-D University, Connell field, 3,490-3,670 feet, 414 bbls. daily.

In the Goldsmith field, Rogers and Rogers No. 2 TXL, 4,250-4,307 feet, pumped 110 bbls. per day. Landreth Production Co. No. 2-K Scharbauer, 4,150-4,200 feet, pumped 490 bbls. per day. Humble Oil & Refining Co. No. 4-C Scharbauer, 4,179-4,205 feet, 622 bbls. per day. Landreth Production Co. No. 8-1 Scharbauer, 4,150-4,280 feet, 1,811 bbls. per day. North Cowden field, Stanolind No. 9 Roberts, 4,105-4,330 feet, 1,021 bbls. per day.

Gaines County

Phillips and others No. 1 E. C. Brand, 4,895-5,030 feet, pumped 65 bbls. per day after acidizing.

Howard County

Superior Oil Co. No. 23-E Roberts, 2,941-50 feet, 1,152 bbls. per day on the pump. L. D. Bradstreet No. 1 Chal, 2,880-2,983 feet, 30 bbls. per day. Continental Oil Co. No. 1-B Settles, 2,430-50 feet, 1,291 bbls. per day by pumping.

Pecos County

In the Valley field, Perrin & Whittaker No. 2 Eaton, 1,600-1,725 feet, 302 bbls. per day natural. At Yates, Ohio Oil Co. No. 57-A Yates, 1,320-1,410 feet, 1,412 bbls. per hour through casing. A wildcat in the E.L.&R.R. Survey, Tom Sloan and others No. 1 Puckett, has been abandoned as dry, total depth 2,973 feet.

Upton County

In the McCamey field, Sun Oil Co. No. 5 Baker, 2,218-2,300 feet, 378 bbls. per day by pumping after acid. Gulf No. 9 Rogers, 2,182-2,247 feet, 481 bbls. daily. Peerless Oil Co. No. 1 Shirley, 2,204-15 feet, 537 bbls. per day. Sid Richardson No. 3 Harrell, 2,040-2,138 feet, 283 bbls. per day. Shell Petroleum Corp. No. 38 Della Brown, 2,145-2,204 feet, 550 bbls. per day. Glen Smith No. 4 Burleson, 2,141-55 feet, pumped 785 bbls. per day. Basin Oil Co. No. 6-B Baker, 2,250-2,321 feet, pumped 1,145 bbls. per day. Texas & Pacific No. 28-A Lane, 2,185-88 feet, 525 bbls. daily on pump.

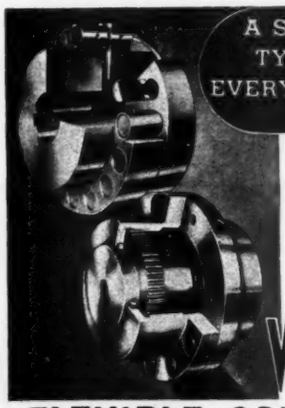
At McElroy, Gulf Oil Corp. No. 159 McElroy, 2,797-2,935 feet, flowed 850 bbls. per day after shot.

Ward County

Grand Falls field, Clark-Mayfield and Aldrich No. 4 Green, 2,200-2,337 feet, 798 bbls. per day. Richardson No. 4-A Johnson, 2,806-40 feet, 272 bbls. per day. Texas Pacific Coal & Oil Co. No. 12 Barker, 2,240-2,401 feet, 405 bbls. per day. Humble Oil & Refining Co. No. 23 Richter, Hathaway field, 2,465-2,605 feet, 725 bbls. per day. Sun and Atlantic No. 4 W. D. Johnson, 2,431-2,575 feet, 491 bbls. per day. Cities Service Co. No. 4 Smith, O'Brien field, 2,540-2,688 feet, 199 bbls. per day.

Winkler County

Phillips Petroleum Co. No. 4 McCabe, 2,867-2,995 feet, 166 bbls. per day. W. K. Royalty Co. No. 1-B Walton, 3,015-75 feet, 1,911 bbls. per day. Chaplin and Bass No. 8 Hess, 3,062-69 feet, 2,538 bbls. per day. In the Kermit field, Maxwell and Atlantic No. 1 Daugherty, 2,880-3,050 feet, 584 bbls. per day. Magnolia Petroleum Co. No. 102 Walton, 3,054-3,240 feet, 384 bbls. per day; No. 106 Walton, 3,114-3,245 feet, 530 bbls. per day; No. 110 Walton, 2,852-2,955 feet, 930 bbls. per day; No. 111 Walton, 2,870-2,975 feet, 892 bbls. per day. Skelly Oil Co. No. 8-A Leck, 2,740-3,075 feet, 454 bbls. per day. Amerada Petroleum Corp. No. 5-A Daugherty, 2,870-2,950 feet, 870 bbls. per day. Humble Oil & Refining Co. No. 9-B Walton, 2,697-3,075 feet, 257 bbls. per day. Sinclair Prairie No. 5-B Vaden, 2,870-3,080 feet, 1,006 bbls. per day.



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Yoakum County

In the Denver area, American Liberty No. 1 Claywater, 5,020-83 feet, flowed 225 bbls. per day after acid. J. W. Murchison and others No. 1 Elliott, 4,955-5,070 feet, 235 bbls. per day. J. L. Greene No. 1 Vevels, dry and abandoned, total depth 5,501 feet.

NORTH TEXAS

Completions

Wilbarger County

Tom B. Medders No. 1 W. T. Waggoner, 3,015-25 feet, 750 bbls.

Young County

P. Atchley No. 6 S. M. J. Benson, 900-12 feet, 50 bbls. Pitzer & West and others No. 3 R. J. LaPrade, 3,800-3,936 feet, 14 bbls. Stuckey Oil & Gas Co. No. 1 Belknap, 775 feet, dry.

Eastern Fields

(Continued from Page 72)

the Fourth sand gauging 80,000 feet a day. In Fairmont district the Owens-Illinois Glass Co. deepened No. 2 R. C. Brock to 2,904 feet through the Fourth and Fifth sands and it is a very light gas well.

In Pleasants County, W. J. McCullough completed a test on his fee property in McKim district in Big Injun sand at 1,690 feet and it gauges 200,000 feet a day.

In Putnam County, V. C. Smith and others second test on the Thomas Gibson farm in Teays Valley district was completed in Salt sand at 1,047 feet and is a gas well gauging 600,000 feet a day.

In Ritchie County there were three gas wells. In Murphy district, J. F. Deem completed No. 2 McGregor Heirs in Maxton sand at 1,806 feet and it gauges 500,000 feet a day. In Clay district the Reno Oil Co. No. 5 B. F. Moore is showing for 100,000 feet a day at 2,050 feet in Keener sand. In Grant district, Bickel Oil Co. completed No. 2 John Hill in Maxton sand at 1,806 feet and it gauges 1 bbl. of oil and 55,000 feet of gas a day.

In Roane County, L. C. Young and others completed a test on the Brell Kee heirs farm in Harper district in Salt sand at 1,522-56 feet. It produced 336,000 feet of gas at 1,547-53 feet. In Geary district the Injun Oil Co. completed No. 2 Rozella Drakes Heirs in Big Injun sand at 1,610 feet and it gauges 55,000 feet a day before shot. In Curtis district the Witago Oil Co. test on the S. M. Silcott heirs farm was drilled through Salt sand, at 1,700-70 feet, and it was dry and abandoned. Water intruded at 1,755 feet.

In Tyler County the American Oil Development Co. completed a second test on the Leroy Pierpont farm in Centerville district in the Injun sand at 2,185 feet and it is a gas well gauging 3,700,000 feet a day.

In Wayne County there was an interesting test. The Chartiers Oil Co. completed No. 1 Oliver Viers in Butler district at 3,809 feet as a gas well gauging 300,000 feet a day. Corniferous lime was topped at 3,805 feet but the gas was from the Newburg at 3,791-99 feet. In Union district the Mountaineer Gas Co. completed a test on the Hartley Ferguson farm at 3,314 feet as a gas well gauging 53,000 feet a day after shot. In this district, Burgess Oil & Gas Co. test on the A. C. Toney farm had Brown shale at 2,675-3,229 feet with gas gauging 1,039,000 feet a day at 2,680 feet, 2,802 feet and 2,932 feet.

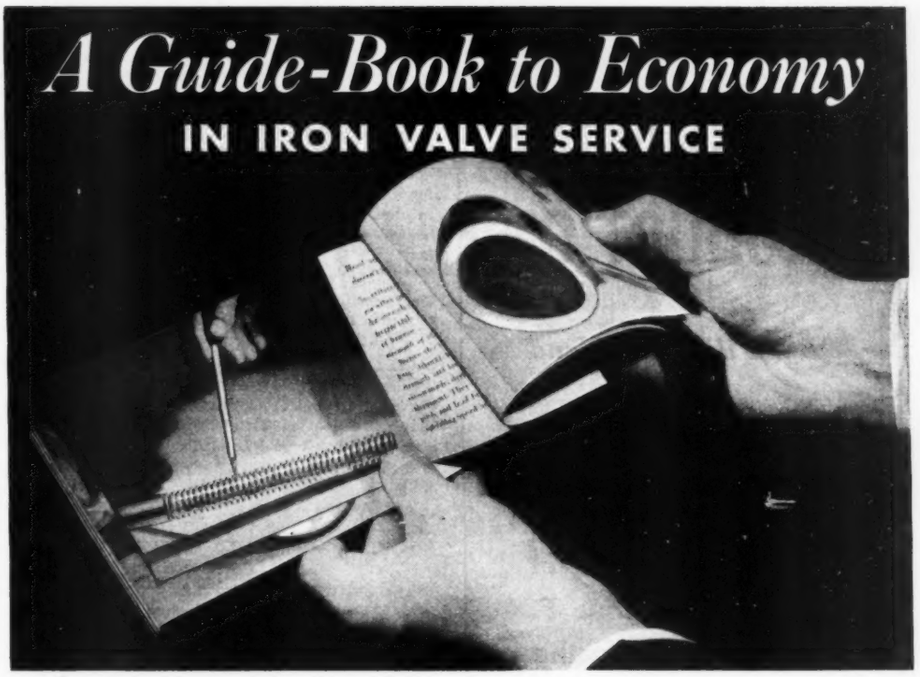
In Wetzel County the Manufacturers Light & Heat Co. completed a large gas well on the Charles and Evelyn McCardle farm in Proctor district, in the Maxton sand at 2,092 feet. It gauged several million feet a day.

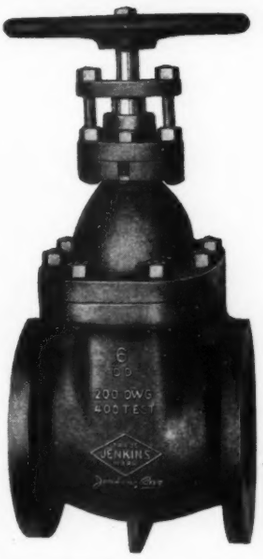
In Wirt County two wells were dry. In Clay district the Shore Oil Co. drilled No. 3 Laura Mayle through the Cow Run sand to 508 feet without striking production. In Burnings Springs district, Glen W. Roberts drilled No. 5 W. C. McConnaughey farm through the Gordon to 3,350 feet without a pay.

Oriskany Field

In the Poca district, Kanawha County, West Virginia Gas Corp. made a location on the John and Sadie Dixon farm; United Fuel Gas Co. a location on the G. G. Dawson farm, United Fuel Gas Co. located No. 4,784 on the Oscar L. Gibson farm.

In Malden district, Kanawha County, Godfrey L. Cabot, Inc., topped Corniferous lime at 5,011 feet on the Roane Land Co. In Elk district the Columbian Carbon Co. reached the Corniferous at 4,870 feet on the Henry R. Glass farm. In Union district, Mullins Gas Co.





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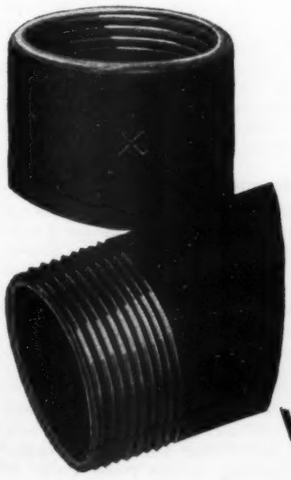

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topped the same formation at 4,835 feet on the Sarah S. Dawley farm.

Deep Sands

In Jackson County the second test of the United Carbon Co. on the Elizabeth Ward Perkins farm in Washington district topped the Corniferous lime at 5,347 feet, drilled in to 5,364 feet and shut down to run a string of casing. In Ripley district the Potter Development Co. drilled to 200 feet and shut down waiting for a stem in the test on the William Chancey farm. In Ravenswood district, W. H. Petry is fishing the bailer lost at 4,200 feet in the test on the D. O. Curry farm.

In Clay County the Pittsburgh & West Virginia Gas Co. is drilling at 2,700 feet in the test on the Jesse Chapman farm in Otter district.

In Boone County the Owens-Illinois Glass Co. has reached a depth of 5,220 feet and fishing for tools in the deep test on the Peytonia Coal Land Co. in Sherman district. In Cabin Creek district, Kanawha County, the Pure Oil Co. is drilling at 5,028 feet in No. 6 on the Slaughters Creek Coal Land Co. lease.

In Wood County the test of the Belmont Quadrangle Co. on the C. D. White farm in Steel district is drilling at 2,705 feet.

California Fields

(Continued from Page 80)

bon was brought in flowing 961 bbls. of relatively clean 18.7-gravity oil and 1,000,000 feet of natural gas per day through a half-inch bean under a tubing pressure of 330 pounds and a casing pressure of 1,030 pounds. This well, in the extreme southern end of the field, was bottomed at 3,543 feet and finished with 234 feet of 6⅝-inch liner including 193 feet of 180-mesh screen. On the Kern County Land lease in section 14-29-27 Western Gulf has spudded in No. 29-B.

not having much success in completing its No. 1 Earl Fruit in section 4-31-29 and as a last resort is washing perforations.

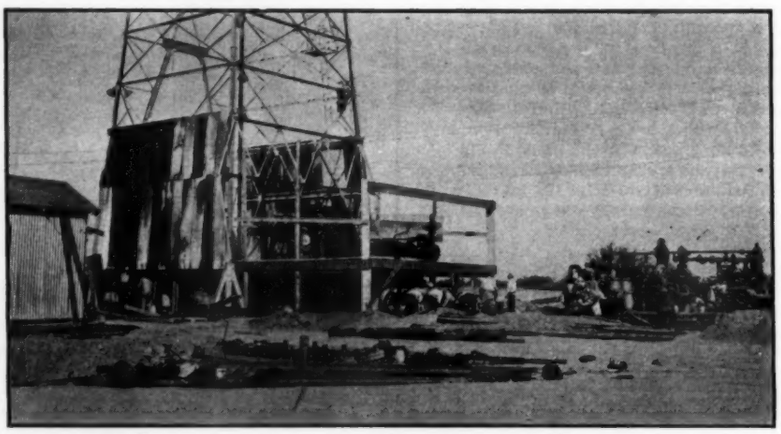
Santa Maria

Drilling operations in the Santa Maria Valley field which have been increasing for several weeks are expected to register a further gain in the immediate future. Union Oil Co., discoverer of the Santa Maria Valley field, E. H. Moore, Inc., and Signal Oil & Gas Co. are all making preparations to expand the amount and scope of work. Sunshine Oil Co. has completed No. 1 Wallace flowing 1,650 bbls. of 16.5-gravity oil per day and J. E. O'Donnell brought in No. 1 Lloyd flowing 570 bbls. of 16.4-gravity oil daily. The former, which topped the Monterey at 4,087 feet and hit the top of the basement Franciscan at 4,467 feet, was bottomed at 4,493 feet and brought in flowing through a 38/64-inch bean under a tubing pressure of 260 pounds and a casing pressure of 400 pounds. J. E. O'Donnell No. 1 Lloyd was bottomed in the basement at 4,753 feet after having logged the top of the Monterey formation at 4,322 feet and the top of the Franciscan at 4,747 feet. Union Oil Co. is making preparations to drill two wells in this area and has staked three additional locations and should close the current year with at least six strings of tools in operation at Santa Maria.

Union's new wells are No. 1 Security, rigging up; No. 2 Bradley, grading road, and No. 1 Acquistapace, No. 3 Moretti and No. 1 Wheat, locations. At present Union is drilling ahead in No. 3 Russell and No. 1 Vicente, and reconditioning No. 2 LeRoy in the Santa Maria Valley field. E. H. Moore, Inc., is drilling ahead in wells Nos. 2, 3, 4 and 5 on the Union Sugar property.

El Segundo

With five wells drilling ahead between 5,000 and 6,000 feet and 15 making hole below 6,000 feet it appears quite probable that several producers will be completed in the El Segundo field within the next few weeks. Recent development in the northwestern end of the structure indicates a marked unconformity in both the Conglomerate and Schist and this may be found to exert a very pronounced effect on production. Indicative of Schist highs in the town lot area the drilling list shows Ohio Oil Co. No. 9 Gough in Schist at 7,278 feet; Richfield Oil Corp. No. 1 McCray in Schist at 7,099 feet; Ruchti Oil Co. No. 4 El Segundo in Schist at 7,099 feet and No. 5 Security of the Texas Co. in Schist at 7,405 feet. Ruchti Oil Co. topped the Schist at 6,900 feet, the highest point at which the basement has been found in any well up to the present. Pacific Western Oil Co. No. 1 Goodwin, completed as a flowing well several weeks ago at 7,436 feet, stopped flowing early in the week and the crew is at present rigging up pumping equipment. Drilling operations during the next two weeks will probably be the determining factor in future drilling in the town lot area because during this time several wells will be given production tests. If the outcome is satisfactory several additional wells will be started as operators have six locations staked awaiting the outcome of present work. In the Long Beach field Richfield Oil Corp. has completed No. 5 Malcolm-Davis pumping 110 bbls. of clean 23.7-gravity oil daily from 2,760 feet after finishing the hole with 79 feet of 6⅝-inch liner including 51 feet of perforated landed on bottom.



Rigging up to drill a well in Shell Oil Co.'s Ten Section field

Meridian Oil Co. No. 7 Turner has been completed at 3,038 feet and scheduled for an early production test. L. C. Simmel has about finished cleaning out well No. 1 in section 23-29-27 which sanded up after being on production for about a day.

Wood-Callahan Oil Co. completed No. 1 Harvey in the Edison field, pumping 140 bbls. of 18.1-gravity oil daily from 3,573 feet. This well is in section 21-30-29. It was originally bottomed at 4,450 feet but the lower part of the hole was abandoned and the well redrilled to the completion depth.

Mountain View

North American Oil Consolidated, in the Mountain View field, completed No. 2 Tupman in section 9-31-29, flowing 1,145 bbls. of clean 24.1-gravity oil and 300,000 feet of natural gas per day from 5,567 feet. Hogan Petroleum Co. No. 4 Bankline-Symons in section 4-31-29 in the eastern end of the Mountain View structure is holding up in good shape, producing 576 bbls. of very clean 26.7-gravity oil daily at present. The company spudded in No. 5 Bankline-Symons and expects to have No. 5 Symons-C.C.M.O. on production within two weeks as an effective water shut off has been secured on the 9⅝-inch casing landed at 5,305 feet with bottom of the hole at 5,825 feet. Petrol Production Co., drilling subsidiary of the Petrol Corp., is

Texas and Louisiana Gulf

By
NEIL WILLIAMS

NEW PAY FOUND IN ORANGE AND SEGNO FIELDS IN TEXAS

HOUSTON, Tex., Nov. 22.—Operators in the Gulf Coast district are expecting much field activity in the Orange and Segno fields in Orange and Polk counties following the completion of two prolific producers which opened new sands in the two fields.

Flank development of the Orange field, Orange County, is assured as a result of the completion of Tillery & Ryan No. 1 Chesson, which flowed 808 bbls. of 35-gravity oil on a 24-hour potential test through a quarter-inch choke, with tubing and casing pressure equalized at 950 pounds. Production is from the Frio sand at 5,930-46 feet, the total. The well is about a mile from production on the southwest flank of the field in the William Dyson Survey.

Location for a possible 10,000-foot test has been made by the Union Production Co., which is moving in material for No. 2 Lutcher-Moore Lumber Co., in the field proper, 1,062 feet north of No. 1 in the Dyson Survey. On the northeast flank, Glenn McCarthy is drilling below 3,400 feet on his No. 1 Brown, in the Bradley Graner Survey. Other locations are expected in the vicinity of the extension well as the ownership is divided among many major and independent companies.

Added importance was given the Segno field, southern Polk County, following the completion of Gulf Oil Corp. No. 8 Wing about a mile south of the nearest production, which flowed 737 bbls. of pipe line oil per day through a quarter-inch choke, with tubing pressure 1,100 pounds and casing pressure 1,200 pounds. Production is from the Lower Saline Bayou formation, through perforations at 6,261-64 feet. Prior to the completion of the well, Segno had been looked upon as a comparatively small area, but with the discovery of this new sand the structure may cover a large area. Production heretofore has been confined to the Upper Cockfield sand, ranging from 5,100 to 5,300 feet.

Old Ocean Extended

Harrison & Abercrombie extended the old Ocean field several hundred feet to the southwest with the completion of No. 1 Nellie Smith, in the Charles Breen Survey. Bottomed at 10,638 feet, the well was completed through perforations at 10,470-80 feet for an initial production of 275 bbls. per day through various chokes, under a working pressure of 3,570 pounds. Same operator's No. 1 Copeland & Osborn is coring in hard sand below 10,269 feet.

At Sandy Point, Brazoria County, H. J. DeArman is making a final attempt to complete his No. 1 Edmundson for a producer. With two tests at 6,520-30 feet and from 6,505-09 feet showing salt water, the casing has been perforated at 6,557-65 feet for a third. The well is about 6,000 feet southeast of production in Block 51, D. Talley Survey.

At Friendswood, Harris County, Humble Oil & Refining Co. No. 1 Hicks-Hoidales expected to extend the field to the south as it is bottomed in sand at 6,055 feet with 5½-inch casing cemented at 6,035 feet. The sand section was topped at 5,978 feet. Same company's No. 1 DeGeorge & Greer flowed 535 bbls. per day through a quarter-inch choke from a screen setting at 6,050-80 feet, total depth. New locations included No. 4 Beamer, No. 1 Hoidale-Forster and No. 1 Gail Whitcomb and E. Grandstaff.

Hardin Extended

Shell Petroleum Corp. No. 1 Hanchey extended the southwest extension area of the Hardin field, Liberty County, to the north when it flowed 593 bbls. per day through a quarter-inch choke, with tubing pressure 1,000 pounds and casing pressure 750 pounds. The hole is bottomed at 7,622 feet with 5-inch casing cemented at 7,609 feet. Halliburton Oil Producing Co. is moving in material for No. 1 Hanchey, a south offset to Frazier's No. 1 Hanchey in the H. B. Johnson Survey. This makes the eighth active location in the field.

The second producer in the Hitchcock field, Galveston County, looms as Nat Hunter is preparing to run casing at No. 1 Maco Stewart, a west offset to the discovery well which is reported to have cored the Miocene sand at 5,135-57 feet. Bottom of the hole is 5,160 feet. The discovery well continues to produce from 112 to 125 bbls. per day under choke.

In the Palacios field, Matagorda County, much attention was centered on the progress of Sun Oil Co. No. 1 Bay Shore Farms, which is drilling plug preparatory to drilling ahead from a total depth of 11,327 feet. Seven-inch casing was cemented at 11,300 feet. Offsetting the discovery well, Glenn H. McCarthy is testing No. 2-A Foley at 8,350-34 feet.

The first production test to be made on Gulf Oil Corp. No. 20-C Kirby Lumber Co., 3,000 feet southeast of production of the Cleveland field, Liberty County, showed salt water through perforations at 5,875-77 feet. The perforations have been "squeezed off" and perforations are being made into a lower sand. The well was drilled to 5,927 feet and 5-inch casing was cemented at 5,925 feet.

In the Orchard field, Fort Bend County, Gulf Oil Corp. deep test, No. 53 Moore, is being watched closely as geophysical research work is done at a plugged-back depth of 9,450 feet. The hole was carried to a total depth of 10,085 feet, several hundred feet below the Cook Mountain horizon.

Seven Wildcats Started

Seven wildcat locations were announced for the Texas Coast the past week. On the Cheek Prospect, Jefferson County, Glenn H. McCarthy is moving in material for No. 1 J. E. Broussard, located out of the SE cor. of Lot 3 of Oak Park Acres Subdivision in the C. Hillebrand Survey. In the Hartense area, Polk County, National Standard Oil Corp. has made location for No. 1 W. T. Carter Brothers in the M. S. Womack Survey. In the Huffsmith or Indican Hill area, Harris County, H. D. Dearman has derrick up for No. 1 L. Geiseke in the Isaac Bunker Survey No. 78, while on the Carlos dome, Grimes County, Hubert Holt and others have derrick up for No. 1 W. W. Greer and others in the Patrick B. O'Connor Survey.

The remainder of the locations were made in the Lower district, two being located in Wharton County, while the other is in Brazoria County. On the Hilje Prospect, Wharton County, Texas Co. is moving in material for No. 1 Adrian Johnson in the John Bognad Survey No. 78, while in the same county and located in the Lissie area, Strake Petroleum Corp. No. 1 O. R. Strunk is in the L. P. Jennings Survey. It is scheduled to be drilled below 8,000 feet. At Bryan Mound, Texas Co. No. 4 Freeport Sulphur Co. is located in the C. Arriola Survey. Several attempts have been made to develop the flanks of this dome, but all were failures due to heaving shale.

Louisiana Fields

Prospects of opening the first oil production at the South Jennings field, Jefferson Davis Parish, Coastal Louisiana were bright by the showing of Loffland Brothers No. 1 Isaac Fontenot, section 16-10s-3w. On an 11-minute drill-stem test through perforations at 8,870-75 feet it showed 95 pounds of working pressure, 20 stands of 38-gravity oil, 10 stands of oil and mud and 3 stands of salt water. It is shut down awaiting orders. A previous test at 8,869-94 feet showed 3,200 feet of salt water with some distillate and no pressure. It is possible that the second perforations were made too high in the water section and these are expected to be squeezed off and the casing reperforated a few feet lower.

Union Sulphur Co. No. 1 Calcasieu National Bank continues to attract attention as additional showings are found as the well is cored deeper. In a core at 8,273-78 feet, the operators recovered 5 feet of sand which carried a good oil odor and a good cut. Additional showings have been encountered from 8,022-57 feet. The latter sand section was topped at 8,270 feet. The well is located on a large block centering in section 12-9s-6w.

On the South Sulphur Prospect, Calcasieu Parish, Union Sulphur Co. abandoned as dry No. 1 J. A. Bel at 8,454 feet and is moving the rig about a mile to the southwest for No. 1 American Sulphur & Oil Co., which is 1,652 feet south and 2,000 feet west of the NE cor. of section 16-10s-10w.

The second location in the Horseshoe Bayou field, St. Mary Parish, was made by the Texas Co. for No. 1 St. Mary Parish Land Co. in section 37-17s-9e. The discovery well is producing from a 10,000-foot horizon and was discovered by the company this year.

In the Gibson field, Terrebonne Parish, Shell Petroleum Corp. No. 3-B Realty is bottomed in the discovery horizon at 9,500 feet and a production string of casing has been cemented. Location is in section 18-17s-15e. Location for No. 4 Pelican has been made in section 19.

In the North Crowley field, Acadia Parish, Humble Oil & Refining Co. No. 1 Laumbrecher in the SE quarter section 4-9s-1e is bottomed at 8,478 feet and is running Schlumberger survey. It has apparently missed the discovery sand at 8,100 feet. Same company's No. 1 Habetz is coring sand at 8,102 feet.

Following the completion of its No. 1 Brookshire, which opened up the first oil production for the Abbeville field, Vermilion Parish, Continental Oil Co. is reworking No. 1 O. C. Hebert, the discovery well which was completed for a distillate well in a 7,600-foot sand. The perforations will be cemented off and the cement drilled out to 7,800 feet, where commercial production was found.

Substances From Petroleum

The elements and compounds derived from petroleum, and the products from the cracking operation, are listed, in tabular form, in a new publication, Erdolbestandteile, by Dr. Edmund Waldmann, the Austrian Petroleum Institution, Vienna, pages 68, price $4.

The natural substances, such as methane, carbon dioxide, helium, are listed in the first part, together with the products of crude oil. In the second part the derivatives of cracking oils and by-products resulting from steam, hydrogen or aluminum chloride, are listed. The substances are described under name, formula, structural formula, physical constants, origin, literature references. This pamphlet may be obtained from Oster-reichisches Petroleum Institut, 9 Eschenbachgasse, Wien, 1, Austria.

Kansas Fields

(Continued from Page 91)

full of water at 2,450 feet and was underreaming 8-inch casing at 2,657 feet.

Arab Petroleum Co. and others No. 1 Ogle, SE SE section 9-1n-14e, Richardson County, had a show of free oil at 2,288-2,300 feet, Viola lime 3,019 feet, slight showing of oil at 3,019-40 feet, hole full of water at 3,075 feet and 3,152 feet, possibly from behind casing, showing of oil at 3,100 feet, set 6-inch casing at 3,230 feet, Wilcox sand 3,255 feet, Plattsville 3,269 feet, showing water, Granite 3,423 feet, total depth, and was plugging back to Viola lime.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Nov. 20. — Effective November 15, Imperial Oil, Ltd., and the British American Oil Co. further reduced the prorated amount of crude from the Turner Valley field to be handled by them to 35 per cent of potential production. The announcement by J. H. McLeod, western production manager of Imperial Oil, states:

"With the nominal potential of the crude oil wells presently producing in Turner Valley approximating today a figure of 21,000 bbls., we regret that it becomes necessary to again reduce the prorated amount of production that this company can handle.

"We believe that in fairness to all operators it is of immediate importance that a revised test to determine potentials be conducted on all wells that have produced for a period of 30 days or longer.

"Stocks of crude oil are presently taxing this company's storage almost to capacity, and while our trunk lines have been operated to capacity since October 17 and will continue to be so indefinitely, it is essential that we should have a factor of safety in our stock tanks amounting to a minimum of three days' deliveries.

"The amount of 'test oil' that we have been endeavoring to handle from producing wells seeking to determine their potential, is largely responsible for the increase in our crude oil stocks and we would suggest that operators immediately take steps to increase tankage at their wells, as, until our stocks of crude oil are materially reduced, we are not in a position to take care of 'test oil' in quantity."

Turner Valley Producers

In the southwest extension to Turner Valley, Brown Oil Corp. No. 1, LSD 14, section 16-18-2w5, bottoming in the lime at 6,814 feet with natural potential of 320 bbls. a day, was treated with acid, developing a flush production reported as high as 3,400 bbls. a day. Official figures show a settled potential of 1,850 bbls. a day, with 5,000,000 feet of gas. Brown No. 1 is one of the farthest southwest producers and opened entirely new territory, and the big production secured on acidization will probably stimulate farther extensions in that direction. Production will be prorated to around 650 bbls.

Brown No. 2, LSD 8, section 20-18-2w5, bottoming in the lime at 7,002 feet with settled potential production around 320 bbls., was also acidized, developing around 750 bbls. settled production with about 1,000,000 feet of gas. It is being prorated to around 262 bbls.

Royal Crest Petroleums No. 1, LSD 9, section 32-18-2w5, with potential of 600 bbls., is prorated at 210 bbls. Four Star Petroleums No. 1, LSD 13, section 28-18-2w5, with potential of 600 bbls., is prorated at 210 bbls. Three Point Petroleums No. 1, LSD 12, same section, is testing, and looks like a good crude producer.

In section 29-18-2w5, Commoil No. 1, LSD 15, bottoming in the lime at 7,475 feet with potential of over 1,800 bbls. provisionally prorated at 585 bbls. is being acidized. It is the farthest west producer and well down the structure, and owing to limited pipe line and storage facilities no definite production test has been made. It is the third biggest producer in the field, with prospects of ranking first after acidizing. Granville Oils No. 1, LSD 16, same section, bottoming in the lime at 7,321 feet with production prorated at 175 bbls., will likely be acidized a second time. Share Royalties No. 1, N half LSD 8, prorated at 168 bbls., has been given a second treatment of 10,000 gallons of acid, and is testing production.

In the southwest extension, Firestone Petroleums No. 1, LSD 13, section 16-18-2w5, finished in the lime at 6,713 feet, looks like a fair producer, and will likely be acidized.

Tests in the Lime

In section 33-18-2w5, Royalite Oil Co. No. 6 Sterling Pacific, LSD 5, is below 6,987 feet, after getting the Madison limestone at 6,683 feet. It will likely be finished this month.

In section 32-18-2w5, West Flank Oil Co. No. 1, LSD 1, is below 6,939 feet after cementing in the top of the Madison at 6,720 feet.

In section 29-18-2w5, National Petroleum Corp. No. 1, S half LSD 8, is below 6,968 feet after getting the lime at 6,786 feet. Considerable shows of crude and gas have been encountered.

West Side Drilling

In West Central Turner Valley, Brown Oil Corp. No. 3, LSD 15, section 19-19-2w5, is close to 6,000 feet.

In section 28-18-2w5, Richland No. 2, LSD 5, is in the Dalhousie sands below 6,100 feet with the lime expected around 6,300 feet.

In section 20-18-2w5, Royal Canadian Oils, No. 1, LSD 15, is below 6,964 feet, and believed nearing the lime. Sunset Oils No. 1, LSD 10, is below 6,779 feet.

Kamsack Gas Field

An important shallow gas field has apparently been opened in eastern Saskatchewan near the Manitoba boundary as a result of deep drilling operations started this year by Coal Gate Oils, Ltd., of Regina. The first gas discovery was actually made three years ago when a water well drilled by the Russell Hotel at Kamsack encountered a heavy gas flow at 275 feet. The well caved after blowing in and no attempt was made to utilize the gas encountered in this or subsequent water wells. This year, Coal Gate Oils No. 1 was started 2½ miles southeast of Kamsack as a test of the deeper formations. At 233 feet it encountered a gas flow, estimated 1,000,000 feet a day, which is increasing. Coal Gate No. 2 blew in at 215 feet with a similar production; and No. 3 is now drilling on the outskirts of Kamsack on town property. Two additional tests will be drilled, one about 2½ miles north and another a similar distance south of the discovery wells, to help define the structure.

Applications have been made for gas franchises for Kamsack and Yorkton, and Canora, Verigin, Mikado and intermediate towns will also be approached. The company is planning systematic development of the field, utilizing gas from the earlier wells as drilling and camp fuel. Two rigs, a Howell spudder with steel mast capable of drilling 2,500 feet, and an Armstrong spudder capable of drilling around 1,000 feet, are already in the field, and a standard outfit is being brought in. Drilling in the Kamsack area will be limited to tests of the shallow gas sand, which can be completed within 10 days; but Coal Gate No. 1, started with a 15-inch hole, will be deepened to test lower horizons and particularly oil possibilities. So far, no indications of water in the sand have been encountered.

Official production tests will be made as soon as the necessary apparatus can be secured. The gas is odorless with a high B.t.u. content.

Associated interests are resuming work on a test at Reserve, in the Pei Wei Hills of eastern Saskatchewan, about 35 miles south of Hudson Bay Junction, which has been standing at 1,253 feet. Casing is being run and a production test will be made, and if necessary the hole will be drilled deeper.

Gates Petroleum, Ltd., which has an interest in No. 1 well in the Kamsack field, is below 270 feet on a test near Pilot Mound, in western Manitoba, close to the Saskatchewan boundary. The Saskatchewan government has set aside 116

(Continued on Page 114)

Rice Enough for CHIANG KAI-SHEK'S ARMY

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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Hancock-Bush, No. 1-W Santa Maria, Santa Barbara	25-10-34	4,335	sd. sh. drlg.
Hancock-Bush, No. 2 C.L., Santa Maria, Santa Barbara	30-10-33	4,165	sd. sh. drlg.
Macrate, A. N., No. 2-R Santa Maria, Santa Barbara	23-10-34	2,540	sd. sh. drlg.
Mitchell, A. D., No. 1-W Santa Maria, Santa Barbara	27-10-34	1,972	sd. sh. drlg.
York Oil, No. 1 Doane, Santa Maria, Santa Barbara	27-10-34	4,000	sd. sh. drlg.
Pet. Prop., Inc., No. 1-R Santa Maria, Santa Barbara	19-10-33	2,321	Schist; drlg.
Sunshine Oil, No. 1-W Santa Maria, Santa Barbara	27-10-34	4,493	flow, 1,570 b.d.
Linnell Oil, No. 1 Santa Maria, Santa Barbara Co.	23-10-34	3,211	cleaning out
Jones, Frank, No. 1 Santa Maria, Santa Barbara Co.	26-10-34	4,310	sd. sh. drlg.
Moore, E. H., No. 3 Sugar, Santa Maria, Santa Barbara	24-10-35	4,794	sd. sh. drlg.
Moore, E. H., No. 4 Sugar, Santa Maria, Santa Barbara	19-10-34	4,180	sd. sh. drlg.
Moore, E. H., No. 5 Sugar, Santa Maria, Santa Barbara	25-10-35	3,630	sd. sh. drlg.
Signal Oil, No. 1 Libeu, Santa Maria, Santa Barbara	26-10-34	3,941	sd. sh. drlg.
Union Oil, No. 3 Russell, Santa Maria, Santa Barbara	30-10-33	4,265	sd. sh. drlg.
Union Oil, No. 1 Vicente, Santa Maria, Santa Barbara	21-10-34	4,240	sd. sh. drlg.
Union Oil, No. 2 LeRoy, Santa Maria, Santa Barbara	24-10-35	5,230	cleaning out
Union Oil, No. 17 Cal. Coast, Orcutt, Santa Barbara	27- 9-34	3,960	sd. sh. drlg.
Dougan Oil, No. 1 Yelkin, Santa Maria, Santa Barbara	27-10-34	892	sd. sh. drlg.
O'Donnell, J. E., No. 1 Santa Maria, Santa Barbara	21-10-34	4,753	sd. sh. drlg.
Getty, George F., No. 1 Santa Maria, Santa Barbara	27-10-34	4,000	sd. sh. drlg.
Pac. West. Oil, No. 3-H Santa Maria, Santa Barbara	21-10-34	4,264	pump. 402 b.d.
Pac. West. Oil, No. 5-H Santa Maria, Santa Barbara	21-10-34	3,892	sd. sh. drlg.
Pac. West. Oil, No. 1-S Santa Maria, Santa Barbara	27-10-34	3,881	sd. sh. drlg.
Pac. West. Oil, No. 2-D.P., Santa Maria, Santa Barbara	27-10-34	2,584	sd. sh. drlg.
Texas Co., No. 134 Shiells, Ventura Co.	4- 3-19	4,165	sd. sh. drlg.
Richfield Oil, No. 1 McFarland, Camarillo, Ventura	13- 2-21	5,330	hd. sh. drlg.
So. Cal. Drlg., No. 1 McFarland, Camarillo, Ventura	26- 2-21	1,975	sd. sh. drlg.
Condor Oil, No. 1 Sespe, Ventura Co.	6- 4-19	2,193	cleaning out
Stallings & Senter, No. 1 Timber Canyon, Ventura Co.	24- 4-21	160	sd. sh. drlg.
Ivers, H. A., No. 14 Star, Sespe, Ventura Co.	1- 4-20	1,610	sd. sh. drlg.
Williamson Oil, No. 1 Sespe, Ventura Co.	1- 4-20	512	sd. sh. drlg.
Section 20 Oil, No. 1 Sespe, Ventura Co.	20- 5-19	765	hd. sh. drlg.
Speik Oil, No. 2 Sespe, Ventura Co.	33- 5-19	3,299	sd. sh. drlg.
Colima Oil, No. 2 Sespe, Ventura Co.	25- 5-19	3,500	milling
Topa Topa Oil, No. 3 Sespe, Ventura Co.	33- 5-19	4,502	sd. sh. drlg.
Skyline Oil, No. 1-H Hopper Canyon, Ventura Co.	13- 4-18	1,850	sd. sh. drlg.
Continental Oil, No. 8 Grubb, San Miguelito, Ventura	24- 3-24	3,937	redrlg. 1,751
C. C. M. Oil, No. 2 Padre Canyon, Ventura Co.	23- 3-24	7,828	P.B. 6,625
Continental Oil, No. 4 Padre Canyon, Ventura Co.	15- 3-24	5,983	sd. sh. drlg.
C. C. M. Oil, No. 11 Rincon, Ventura Co.	17- 3-24	3,208	will deepen
Oxnard Oil, No. 1 Oxnard, Ventura Co.	10- 1-22	6,302	P.B. 6,200
Tide Water A. O., No. 32 V.L.W., Ventura, Ventura	24- 3-23	5,785	sd. sh. drlg.
Tide Water A. O., No. 30 Lloyd, Ventura, Ventura	27- 3-23	6,880	swabbing
Tide Water A. O., No. 63 Lloyd, Ventura, Ventura	27- 3-23	5,076	O.S. drlg.
Tide Water A. O., No. 69 Lloyd, Ventura, Ventura	27- 3-23	1,925	sd. sh. drlg.
Tide Water A. O., No. 135 Lloyd, Ventura, Ventura	27- 3-23	7,574	cleaning out
Tide Water A. O., No. 138 Lloyd, Ventura, Ventura	23- 3-23	4,992	sd. sh. drlg.
Tide Water A. O., No. 18 Hartman, Ventura, Ventura	22- 3-23	8,117	O.S. drlg.
Tide Water A. O., No. 27 Hartman, Ventura, Ventura	22- 3-23	6,585	sd. sh. drlg.
Shell Oil, No. 92 Taylor, Ventura Ave., Ventura Co.	20- 3-23	5,597	sd. sh. drlg.
General Pet., No. 13 Notten, Ventura, Ventura Co.	28- 3-23	8,790	sd. sh. drlg.
Tide Water A. O., No. 10-E-3 Lost Hills, Kern Co.	3-26-20	2,067	cleaning out
Standard Oil, No. 6 United, Lost Hills, Kern Co.	2-26-20	1,592	pump. 225 b.d.
Standard Oil, No. 7 United, Lost Hills, Kern Co.	2-26-20	1,294	sd. sh. drlg.
Amerada Pet., No. 5 Beer, Devils Den, Kern Co.	22-26-19	3,852	br. sh. drlg.
Franco-Western Oil, No. 14 McKittrick, Kern Co.	8-30-22	2,065	O.S. drlg.
Par Mer Oil, No. 1 McKittrick, Kern Co.	6-31-22	1,551	br. sh. drlg.
Standard Oil, No. 2 Randolph, Semi-Tropic, Kern Co.	14-27-23	7,694	sd. sh. drlg.
Continental Oil, No. 2 Wasco, Kern Co.	8-27-24	11,584	fish. D.P.
Belridge Oil, No. 43-26 North Belridge, Kern Co.	26-27-20	8,415	br. sh. drlg.
Belridge Oil, No. 27-8 North Belridge, Kern Co.	27-27-20	4,995	br. sh. drlg.
Belridge Oil, No. 61-27 North Belridge, Kern Co.	27-27-20	4,982	br. sh. drlg.
Belridge Oil, No. 28-1 North Belridge, Kern Co.	28-27-20	2,251	sd. sh. drlg.
Tide Water A. O., No. 7 North Belridge, Kern Co.	34-27-20	4,992	sd. sh. drlg.
Tide Water A. O., No. 1-21 North Belridge, Kern Co.	21-27-20	3,970	sd. sh. drlg.
Richfield Oil, No. 1-A North Belridge, Kern Co.	22-27-20	2,483	sd. sh. drlg.
Texas Co., No. 2 Martin, North Belridge, Kern Co.	22-27-20	3,271	sd. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern Co.	12-28-20	3,271	sd. sh. drlg.
Eastmont Oil, No. 6 Olcese, Round Mountain, Kern	16-28-29	1,765	sd. sh. drlg.
Fremont Oil, No. 2 Olcese, Round Mountain, Kern Co.	35-28-29	1,630	hd. sd. drlg.
Link Trucking, No. 1 Round Mountain, Kern Co.	30-28-29	1,695	bailing
Shell Oil, No. 16 Freeman, Round Mountain, Kern	20-28-29	1,869	P.B. 1,850
Cal-Western Oil, No. 7 C.C., Round Mountain, Kern	12-28-28	1,860	rig to pump
Vedder, D. G., No. 1 Bell, Round Mountain, Kern Co.	12-28-28	1,977	O.S. drlg.
L. A. Const., No. 1 Tavis, Round Mountain, Kern Co.	4-29-29	3,703	hd. sd. drlg.
Standard Oil, No. 8 Ward, Kern Front, Kern Co.	24-28-27	1,990	bailing
California Star Oil, No. 3-80 Kern Front, Kern Co.	22-28-27	2,755	recmtd. 2,410
Kern River Oilfields, No. 25-3-B Kern Front, Kern Co.	25-28-27	1,866	sd. sh. drlg.
Union Oil, No. 8 Del Rey, Kern Front, Kern Co.	11-28-27	1,900	P.B. 1,840
Fuhrman, A., No. 11 Kern River, Kern Co.	28-28-28	571	sd. sh. drlg.
Morrison, C. S., No. 14-H, Kern River, Kern Co.	2-29-28	260	gr. sd. drlg.
Vedder, D. G., No. 4 B.N.B., Mount Poso, Kern Co.	32-26-28	1,752	rig to pump
Ring Oil, No. 2 Louden, Mount Poso, Kern Co.	32-26-28	1,763	pump 320 b.d.
Ring Oil, No. 29-5 Bowles, Mount Poso, Kern Co.	29-26-28	1,760	pump. 370 b.d.
Ring Oil, No. 3 Shapiro, Mount Poso, Kern Co.	32-26-28	794	sd. sh. drlg.
Sunset Oil, No. 1 S.P., Mount Poso, Kern Co.	3-27-28	1,461	pump. 85 b.d.
Texas Co., No. 12 Vedder, Mount Poso, Kern Co.	4-27-28	1,586	bailing
Vedder Pet., No. 29-2 Lambert, Mount Poso, Kern Co.	29-26-28	1,807	P.B. 1,778
Bargol Oil, No. 3 Newhope, Mount Poso, Kern Co.	11-27-27	1,243	pump. water
Pebble Beach Oil, No. 5 Newhope, Mount Poso, Kern	29-27-27	2,621	O.S. drlg.
Framac Oil, No. 1 Brown, Mount Poso, Kern Co.	22-27-27	1,351	fish. D.P.
Hobbee Oil, No. 3 McVan, Mount Poso, Kern Co.	14-27-27	1,185	pump. 55 b.d.
Vanguard Oil, No. 15 Baker, Mount Poso, Kern Co.	33-27-28	1,758	pump. 347 b.d.
Meridian Oil, No. 7 Turner, Fruitvale, Kern Co.	23-29-27	3,038	rig to pump
Simmel, L. C., No. 2 Fruitvale, Kern Co.	23-29-27	3,760	cleaning out
Western Gulf Oil, No. 10 Red Ribbon, Fruitvale, Kern	27-29-27	3,543	flow, 950 b.d.
Western Gulf Oil, No. 29 K.C.L., Fruitvale, Kern Co.	14-29-27	1,860	sd. sh. drlg.
Sandy Oil, No. 2 Fruitvale, Kern Co.	26-29-27	3,317	pump. water
Section Six Oil, No. 1 Mountain View, Kern Co.	6-31-29	6,365	sd. sh. drlg.
American Expl., No. 1-G Mountain View, Kern Co.	18-30-29	4,792	redrlg. 4,740
Vesta Oil, No. 12 Mountain View, Kern Co.	19-30-29	5,130	O.S. drlg.
Hogan Pet., No. 5 Symons, Mountain View, Kern Co.	4-31-29	5,825	sd. sh. drlg.
Hogan Pet., No. 5 Bankline, Mountain View, Kern Co.	4-31-29	2,791	sd. sh. drlg.
North American Consd., No. 2-1 Mountain View, Kern	9-31-29	5,567	O.S. drlg.
Petrol. Prod., No. 1 Fruit, Mountain View, Kern Co.	4-31-29	5,815	cleaning out
Westbrook Oil, No. 1 Edison, Kern Co.	4-30-29	3,376	sd. sh. drlg.
Wood-Callahan Oil, No. 1 Harvey, Edison, Kern Co.	21-30-29	3,573	cleaning out
General Pet., No. 1 Houchin, Arvin, Kern Co.	27-31-29	7,928	will P.B.
Continental Oil, No. 1 Rosedale, Kern Co.	12-29-26	10,210	redrlg. 7,651
Superior Oil, No. 1 Krause, Greeley, Kern Co.	21-29-26	4,971	sd. sh. drlg.
Superior Oil, No. 9 KCL, Greeley, Kern Co.	3-30-26	7,870	cleaning out
Superior Oil, No. 10 KCL, Greeley, Kern Co.	3-30-26	6,598	sd. sh. drlg.
Standard Oil, No. 11-9 KCL, Greeley, Kern Co.	20-29-26	7,797	sd. sh. drlg.
Standard Oil, No. 11-10 KCL, Greeley, Kern Co.	17-29-26	7,800	sd. sh. drlg.
Standard Oil, No. 11-11 KCL, Greeley, Kern Co.	17-29-26	4,761	sd. sh. drlg.
Standard Oil, No. 1-F Greeley, Kern Co.	20-29-26	7,855	P.B. 7,760
Standard Oil, No. 15-1 KCL, Ten Section, Kern Co.	27-30-26	7,474	sd. sh. drlg.
Standard Oil, No. 17-1 KCL, Ten Section, Kern Co.	9-29-26	6,891	sd. sh. drlg.
Shell Oil, No. 8-28-A KCL, Ten Section, Kern Co.	28-30-26	8,502	sd. sh. drlg.
Shell Oil, No. 36-30-A KCL, Ten Section, Kern Co.	30-30-26	7,476	sd. sh. drlg.
Ohio Oil, No. 3-E, KCL, Strand, Kern Co.	14-30-25	8,175	O.S. drlg.
Standard Oil, No. 1 Magunden, Kern Co.	2-30-28	5,183	sd. sh. drlg.
Monticello Oil, No. 4 Midway-Sunset, Kern Co.	27-31-22	1,544	rig to pump
U. S. Pump & Equip., No. 2 Midway-Sunset, Kern Co.	12-11-24	1,775	sd. sh. drlg.
C. C. M. Oil, No. 55-21 Midway-Sunset, Kern Co.	21-32-23	2,137	hd. sh. drlg.
Pattiway Oil, No. 3 Midway-Sunset, Kern Co.	12-11-24	1,594	sd. sh. drlg.
Hallmark Oil, No. 9 Midway-Sunset, Kern Co.	25-12-24	2,628	O.S. drlg.
Brookshire Oil, No. 3 Midway-Sunset, Kern Co.	24-31-22	2,524	pump. 65 b.d.
Richfield Oil, No. 14 Fellows, Midway-Sunset, Kern	6-32-23	1,166	pump. 102 b.d.
Standard Oil, No. 19 Monarch, Midway-Sunset, Kern	26-12-24	2,700	pump. 115 b.d.
Standard Oil, No. 2-25-L Midway-Sunset, Kern Co.	25-12-24	3,012	pump. 45 b.d.
Standard Oil, No. 127-33-D Midway-Sunset, Kern Co.	33-32-24	1,942	sd. sh. drlg.
Victor Oil, No. 1 Midway-Sunset, Kern Co.	35-32-23	1,173	sd. sh. drlg.
National Oil, No. 30 Midway-Sunset, Kern Co.	35-32-23	2,082	hd. sd. drlg.
Gibson Oil, No. 5 O'Brien, Midway-Sunset, Kern Co.	6-11-23	2,810	sd. sh. drlg.
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern Co.	33-11-23	4,754	gr. sd. drlg.
Texas Co., No. 26 Midway-Sunset, Kern Co.	32-32-24	3,249	pump. 401 b.d.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., plugging big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shut off no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Texas Co., No. 27 Midway-Sunset, Kern Co.	32-32-24	2,884	pump. O. & W.
Texas Co., No. 28 Midway-Sunset, Kern Co.	32-32-24	3,273	P.B. 3,168
Texas Co., No. 29 Midway-Sunset, Kern Co.	32-32-24	1,593	sd. sh. drlg.
Richfield Oil, No. 1-H-A Elk Hills, Kern Co.	1-31-24	3,005	rig to pump
Richfield Oil, No. 3-H-A Elk Hills, Kern Co.	1-31-24	1,790	sd. sh. drlg.
Ohio Oil Co. No. 2-D Tejon, Kern Co.	23-11-19	1,991	sd. sh. drlg.
Universal Oil, No. 1 Tejon, Kern Co.	33-11-19	2,000	sd. sh. drlg.
Bergman, Harry, No. 1 Dos Palos, Fresno Co.	12-12-11	6,138	cleaning out
Pure Oil, No. 1 Cantua, Fresno Co.	31-18-17	8,100	sd. sh. drlg.
Dauphin Dev., No. 1 Alcade, Fresno Co.	30-21-14	1,965	gr. sd. drlg.
Jacalitos Oil, No. 1 Jacalitos, Fresno Co.	14-21-15	4,770	sd. sh. drlg.
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	11,746	fish. D.P.
K. N. D. A., No. 43-34-J Kettleman North, Fresno Co.	34-21-17	7,794	sd. sh. drlg.
K. N. D. A., No. 83-4-P Kettleman North, Fresno Co.	4-22-17	7,071	gr. sd. drlg.
K. N. D. A., No. 27-12-P Kettleman North, Kings Co.	12-22-17	6,975	sd. sh. drlg.
K. N. D. A., No. 38-12-P Kettleman North, Kings Co.	12-22-17	5,814	br. sh. drlg.
K. N. D. A., No. 6-6-Q Kettleman North, Kings Co.	6-22-18	8,310	sd. sh. drlg.
K. N. D. A., No. 27-6-Q Kettleman North, Kings Co.	6-22-18	8,000	sd. sh. drlg.
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	7,497	sd. sh. drlg.
Standard Oil, No. 27-33-J Kettleman North, Fresno	33-21-17	8,530	sd. sh. drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings	11-22-17	7,285	br. sh. drlg.
Standard Oil, No. 76-1-P Kettleman North, Kings	1-22-17	6,480	br. sh. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings Co.	13-22-17	4,398	sd. sh. drlg.
Superior Oil, No. 1 Huffman, Kettleman No., Fresno	29-21-17	10,120	coring ahead
Bandini Pet., No. 5 Whepley, Kettleman No., Fresno	35-21-17	8,387	will deepen
Temblor Oil, No. 1-B Kettleman Middle, Kings Co.	25-23-18	8,695	hd. sh. drlg.
Pyramid Prod., No. 1 Pyramid Hills, Kings Co.	27-24-18	1,027	br. sh. drlg.
Amerada Pet., No. 1 Carano, Los Banos, Merced Co.	19-10-11	4,865	gr. sd. drlg.
Little Cuyama Oil, No. 1 Adelaida, San Luis Obispo	3-10-26	2,475	sd. sh. drlg.
Elba Oil, No. 1 Pajaro, Monterey Co.	6-13-2	3,970	cmtd. 3,900
Amerada Pet., No. 1 Deterding, Rio Vista, Solano Co.	36- 4-2	4,377	gas well
Standard Oil, No. 2 Weyl, McDonald Is., San Joaquin	25- 2-4	5,397	shows gas
Standard Oil, No. 1 Morris, Delano, Tulare Co.	36-24-23	10,065	hd. sh. drlg.
Wilcox, J. F., No. 1 Sears, Tulare Co.	29-24-28	180	sd. sh. drlg.
Trico O. & G., No. 2 Tulare Lake, Tulare Co.	35-21-25	3,230	hd. sh. drlg.
Standard Oil, No. 1 Hopper, Woodland, Yolo Co.	32- 9-1	5,181	redrlg. 3,700
Empire O. & G., No. 1 Woodland, Yolo Co.	8- 9-3	231	sd. sh. drlg.
Wilshire Oil, No. 1 Half Moon Bay, San Mateo Co.	20- 6-5	3,476	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Richfield Oil, No. 2-SF El Segundo, Los Angeles Co.	7- 3-14	6.425	sd. sh. drlg.
Richfield Oil, No. 1 McCray, El Segundo, Los Angeles	12- 3-15	7.020	Schist, drlg.
Richfield Oil, No. 2 McCray, El Segundo, Los Angeles	12- 3-15	3,476	sd. sh. drlg.
Richfield Oil, No. 1-R, El Segundo, Los Angeles Co.	18- 3-14	4,281	sd. sh. drlg.
Sunshine Oil, No. 1 G.W. El Segundo, Los Angeles Co.	12- 3-15	5,280	sd. sh. drlg.
Sunshine Oil, No. 1 C. W. El Segundo, Los Angeles Co.	12- 3-15	6,030	sd. sh. drlg.
Sunshine Oil, No. 2 C.W. El Segundo, Los Angeles Co.	12- 3-15	5,480	sd. sh. drlg.
Sunshine Oil, No. 1-W El Segundo, Los Angeles Co.	12- 3-15	5,991	sd. sh. drlg.
Apex Pet., No. 1 Elsie, El Segundo, Los Angeles Co.	12- 3-15	6,954	sd. sh. drlg.
Tide Water A. O., No. 1 El Segundo, Los Angeles Co.	8- 3-14	7,801	br. sh. drlg.
Ohio Oil, No. 8 Gough, El Segundo, Los Angeles Co.	7- 3-14	7,516	rig to pump
Ohio Oil, No. 9 Gough, El Segundo, Los Angeles Co.	7- 3-14	7,278	Schist; drlg.
Ohio Oil, No. 10 Gough, El Segundo, Los Angeles Co.	7- 3-14	2,384	sd. sh. drlg.
Texas Co., No. 5 Security, El Segundo, Los Angeles	18- 3-14	7,405	sd. sh. drlg.
Ruchti Pet., No. 1 El Segundo, Los Angeles Co.	12- 3-15	7,099	Schist; drlg.
Standard Oil, No. 4 Ref., El Segundo, Los Angeles	13- 3-15	7,474	sd. sh. drlg.
Standard Oil, No. 5 Ref., El Segundo, Los Angeles	13- 3-15	6,980	sd. sh. drlg.
Standard Oil, No. 6 Ref., El Segundo, Los Angeles	13- 3-15	6,530	sd. sh. drlg.
Getty Oil, No. 1-A El Segundo, Los Angeles Co.	7- 3-14	7,450	sd. sh. drlg.
Howard Oil, No. 1 El Segundo, Los Angeles Co.	12- 3-15	3,685	sd. sh. drlg.
Lakeside Oil, No. 10-1 Elsie, El Segundo, Los Angeles	12- 3-15	4,750	sd. sh. drlg.
Wilshire Oil, No. 9-1 Elsie, El Segundo, Los Angeles	12- 3-15	6,470	sd. sh. drlg.
Wilshire Oil, No. 9-2 Elsie, El Segundo, Los Angeles	12- 3-15	6,751	sd. sh. drlg.
Standard Oil, No. 84 L.A.I., Inglewood, Los Angeles	17- 2-14	1,455	cmtd. 1,455
C. C. M. Oil, No. 33-T Torrance, Los Angeles Co.	16- 4-14	3,710	redrlg. 3,465
Kavanaugh, E. C., No. 1 Palos Verdes, Los Angeles	17- 4-14	5,240	tested wet
Rolling Hills Pet., No. 1 Palos Verdes, Los Angeles	27- 4-14	165	sd. sh. drlg.
Tide Water A. O., No. 4 Cypress, Potrero, Los Angeles	34- 2-14	5,242	sd. sh. drlg.
Shell Oil, No. 92 Reyes, Dominguez, Los Angeles Co.	33- 3-13	7,860	tested wet
Union Oil, No. 51 Callender, Dominguez, Los Angeles	33- 3-13	4,211	sd. sh. drlg.
Union Oil, No. 56 Callender, Dominguez, Los Angeles	33- 3-13	9,465	sd. sh. drlg.
Union Oil, No. 57 Callender, Dominguez, Los Angeles	33- 3-13	6,996	sd. sh. drlg.
Union Oil, No. 10 Carson, Dominguez, Los Angeles	33- 3-13	6,784	sd. sh. drlg.
American Oilfields, Ltd., No. 1 Rosecrans, L. Angeles	18- 3-13	4,400	idle
Barnsdall Oil, No. 18 O'Den, Rosecrans, Los Angeles	18- 3-13	7,275	O.S. drlg.
Union Oil, No. 35 H.P., Rosecrans, Los Angeles Co.	18- 3-13	7,795	sd. sh. drlg.
Union Oil, No. 17 Rosecrans, Los Angeles Co.	18- 3-13	7,557	sd. sh. drlg.
Macrate, A. N., No. 2 Rosecrans, Los Angeles Co.	17- 3-13	8,345	rig to pump
War-Mil Pet., No. 1 Moss, Rosecrans, Los Angeles Co.	18- 3-13	793	sd. sh. drlg.
Barnsdall Oil, No. 2-S.F., Newhall, Los Angeles Co.	26- 4-17	5,084	redrlg. 3,960
Burt, A. G., No. 1 Newhall, Los Angeles Co.	36- 4-17	2,450	hd. sd. drlg.
Royal Lands, No. 1 Ramona, Castaic, Los Angeles Co.	8- 4-17	821	hd. sd. drlg.
General Pet., No. 23 Ford, Wilmington, Los Angeles	4- 5-13	2,955	flow. 510 b.d.
General Pet., No. 5 Isco, Wilmington, Los Angeles	4- 5-13	5,075	sd. sh. drlg.
General Pet., No. 1-P, Wilmington, Los Angeles Co.	33- 4-13	3,600	flow. 175 b.d.
General Pet., No. 7-T Wilmington, Los Angeles Co.	4- 5-13	2,560	sd. sh. drlg.
Allied Pet., No. 25, Wilmington, Los Angeles Co.	32- 4-13	3,705	pump. 95 b.d.
Allied Pet., No. 26, Wilmington, Los Angeles Co.	32- 4-13	2,730	sd. sh. drlg.
Bankline Oil, No. 7-D.H., Wilmington, Los Angeles	34- 4-13	1,854	sd. sh. drlg.
Bankline Oil, No. 8-D.H., Wilmington, Los Angeles	34- 4-13	3,452	pump. 102 b.d.
Bankline Oil, No. 24-D.H., Wilmington, Los Angeles	34- 4-13	3,035	sd. sh. drlg.
Bankline Oil, No. 8-P.T., Wilmington, Los Angeles	34- 4-13	3,437	sd. sh. drlg.
Baker Oil, No. 1 Wilmington, Los Angeles Co.	35- 4-13	3,502	sd. sh. drlg.
Exeter Oil, No. 2 Banning, Wilmington, Los Angeles	32- 4-13	3,515	sd. sh. drlg.
Macson Oil, No. 55-C, Wilmington, Los Angeles Co.	32- 4-13	3,643	flow. 225 b.d.
Mid-Cal. Oil, No. 6-B.G., Wilmington, Los Angeles Co.	33- 4-13	169	sd. sh. drlg.
Pac. Western Oil, No. 1-R Wilmington, Los Angeles	33- 4-13	5,684	sd. sh. drlg.
Raleigh Oil, No. 1 Patten, Wilmington, Los Angeles	33- 4-13	2,981	sd. sh. drlg.
Royalty Serv., No. 2-P Wilmington, Los Angeles Co.	32- 4-13	3,590	flow. 220 b.d.
Royalty Serv., No. 22-7 Wilmington, Los Angeles Co.	33- 4-13	3,570	sd. sh. drlg.
Royalty Serv., No. 1-K Wilmington, Los Angeles Co.	33- 4-13	2,986	sd. sh. drlg.
Selegna Drlg., No. 10 Wilmington, Los Angeles Co.	33- 4-13	3,567	sd. sh. drlg.
Union Pacific, No. 47 Wilmington, Los Angeles Co.	3- 5-13	3,697	sd. sh. drlg.
Union Pacific, No. 54 Wilmington, Los Angeles Co.	4- 5-13	3,200	sd. sh. drlg.
Union Pacific, No. 56 Wilmington, Los Angeles Co.	4- 5-13	3,390	sd. sh. drlg.
Union Pacific, No. 59 Wilmington, Los Angeles Co.	4- 5-13	2,162	sd. sh. drlg.
Union Pacific, No. 60 Wilmington, Los Angeles Co.	4- 5-13	3,479	flow. 510 b.d.
Union Pacific, No. 63 Wilmington, Los Angeles Co.	34- 4-13	3,359	flow. 458 b.d.
Union Pacific, No. 64 Wilmington, Los Angeles Co.	34- 4-13	3,352	flow. 390 b.d.
Union Pacific, No. 65 Wilmington, Los Angeles Co.	34- 4-13	3,350	sd. sh. drlg.
Union Pacific, No. 67 Wilmington, Los Angeles Co.	34- 4-13	2,950	sd. sh. drlg.
Wilton Oil, No. 2 Wilmington, Los Angeles Co.	32- 4-13	3,640	sd. sh. drlg.
Alford Oil, No. 1 C. Y. Wilmington, Los Angeles Co.	22- 4-13	3,301	sd. sh. drlg.
British American Oil, No. 1 Pico, Los Angeles Co.	12- 2-12	4,020	sd. sh. drlg.
Davis, No. 1 Garvey Ranch, Montebello, Los Angeles	22- 2-11	560	sd. sh. drlg.
Texas Co., No. 18 Baldwin, Montebello, Los Angeles	5- 2-11	4,250	hd. sd. drlg.
St. Helens Pet., No. 20-M, Montebello, Los Angeles	6- 2-11	5,297	hd. sd. drlg.
Union Oil, No. 2 Flood Control, Los Angeles Co.	13- 4-13	998	sd. sh. drlg.
Union Oil, No. 3 Flood Control, Los Angeles Co.	13- 4-13	3,000	sd. sh. drlg.
Texas Co., No. 4 Bauman, Long Beach, Los Angeles	19- 4-12	4,756	sd. sh. drlg.
Texas Co., No. 14 Harlow, Long Beach, Los Angeles	19- 4-12	4,650	cleaning out
Shell Oil, No. 1-Hath., Long Beach, Los Angeles Co.	28- 4-12	2,191	sd. sh. drlg.
Rico Pet., Inc., No. 1 Long Beach, Los Angeles Co.	30- 4-12	4,080	fishing W.P.
Richfield Oil, No. 5 Davis, Long Beach, Los Angeles	19- 4-12	2,760	pump. 110 b.d.
Richfield Oil, No. 11 Denni, Long Beach, Los Angeles	29- 4-12	1,991	sd. sh. drlg.
Richfield Oil, No. 4 Keon, Long Beach, Los Angeles	29- 4-12	4,115	sd. sh. drlg.
Clayton, G. L., No. 1 North Long Beach, Los Angeles	32- 3-12	6,133	resume work
Union Oil, No. 100 Santa Fe Springs, Los Angeles Co.	6- 3-11	11,090	sd. sh. drlg.
General Pet., No. 37-A Santa Fe Springs, Los Angeles	6- 3-11	3,900	redrlg. 3,730
Texas Co., No. 7-W Santa Fe Springs, Los Angeles Co.	6- 3-11	6,530	milling
Continental Oil, No. 40 Bixby, Seal Beach, Orange Co.	2- 5-12	7,501	P.B. 7,148
Shell Oil, No. 4-1 Columbia, Olinda, Orange Co.	9- 3-9	7,276	hd. sd. drlg.
Brea Canyon Oil, No. 36 Brea Canyon, Orange Co.	2- 3-10	4,552	fish. D.P.
Standard Oil, No. 127 Murphy, West Coyote, Orange	18- 3-10	3,240	cmtd. 3,224
Arrowhead Oil, No. 2 Bradford, Richfield, Orange Co.	32- 3-9	4,555	pump. 45 b.d.
Texas Co., No. 2 Isaacs, Richfield, Orange Co.	32- 3-9	3,458	bailing
Union Oil, No. 46 Chapman, Richfield, Orange Co.	29- 3-9	4,280	sd. sh. drlg.
Oil Income, No. 1 Anderson, Yorba, Orange Co.	22- 3-9	1,685	O.S. drlg.
Hjorth & Mohr, No. 1 Yorba, Orange Co.	22- 3-9	1,403	P.B. 1,345
Berco Oil, No. 1 Milhous, Yorba, Orange Co.	22- 3-9	565	sd. sh. drlg.
Angelus Oil, No. 1 Jacobs, Yorba, Orange Co.	22- 3-9	880	sd. sh. drlg.
Beverly Hills Pet., No. 1 Fricke, Yorba, Orange Co.	21- 3-9	1,914	pump. 50 b.d.
Bachmann Pet., No. 1 Page, Yorba, Orange Co.	22- 3-9	1,630	bailing
Shell Oil, No. 1-H Anaheim, Orange Co.	9- 4-10	7,563	sd. sh. drlg.

KANSAS

Week Ending November 20 (Descriptions are East unless marked otherwise)

Barber County

Kansas Oil Corp. No. 1 Mease, NE SE SE sec. 27-30-11w. Drlg. 3,260 ft.
Olson Oil Co. and Skelly Oil Co. No. 1 Elsea, SW SE NW sec. 27-32-14w. Sil. 5,225-48 ft.; T.D.; inc. wtr. to P.B.
Palmer Oil Corp. et al No. 1 Warwick, C NW sec. 29-31-10w. Rig.
Pryor & Lockhart No. 1 Pickens, CWI, E½ SW sec. 34-30-13w. Set 12-in. 760 ft.; W.O.C. 1,600 ft.

Barton County

R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. Drlg. 120 ft.
Martin & Foraker et al No. 1 Dick Est., NE SW SW sec. 31-19-11w. Rig.
Arch Merriman et al No. 1 Norris, NE NE NW sec. 33-17-11w. Drlg. 3,075 ft.
C. L. Price No. 1 Hammeke, NE NE SW sec. 12-18-12w. Sil. 3,415-27 ft.; 1,800 ft. O.I.H.; bails 4 bbls. wtr. every other day.
Shell Pet. Corp. No. 1 Ehrlich, SW cor sec. 1-16-14w. Sil. 3,267 ft.; T.D. 3,296 ft.; 2,800 ft. O.I.H.
Stanolind O. & G. Co. No. 1 Hagen A. SE sec. 21-20-11w. Sil. 3,328 ft.; T.D. 3,333 ft.; R.U.S.T.

Chautauqua County

C. L. Brosius et al No. 1 Garrett, NW SW NW sec. 26-32-11. H.F.W. 2,076 ft., T.D.; P.B. 1,545 ft.; C.O.
W. G. Buffington No. 1 Fisher, CWL SW NW sec. 10-34-9e. S.D. 1,677 ft.
Harrison No. 1 Brown, NE SE NE sec. 19-34-10. S.D. 820 ft.
Ingot Oil Co. No. 1 McKee, SW NE SW sec. 21-32-12. T.D. 1,209 ft.; acd.
I. W. Siegel No. 1 Temple, SW cor. sec. 31-32-12. Rig.

Clark County

Olson Oil Co. No. 1 Lehman, SE SW sec. 20-32-31w. Set 12-in. 722 ft.; W.O.C.
Olson Oil Co. et al No. 1 Watkins. SW NW sec. 23-32-21w. Drlg. 4,848 ft.

Cowley County

Arthur Brewer No. 1 Shepard, NE NE SE sec. 20-32-4e. Rng. 8-in. 2,213 ft.
Murta & Wilson et al No. 1 Stuber, SE NE NE sec. 27-30-5e. Set 10-in. 1,485 ft.; C.O.
Pryor & Lockhart No. 1 Brown, NE SE SE sec. 34-33-2e. Sil. 3,853-64 ft., T.D.; P.B. 3,403 ft.; C.O. 3,402 ft.
Roth et al No. 1 Fry, NW SW SW sec. 8-31-3e. Drlg. 715 ft.
Smith & Price No. 1 Henderson, SW SW sec. 25-32-6. Drlg. 2,540 ft.
Earl Wakefield No. 1 Whitson, SW NE SE sec. 8-32-4e. Drlg. 325 ft.

Ellis County

Bradley Oil Co. No. 1 Jenson, NW NW SE sec. 36-11-19w. Drlg. 1,665 ft.
Brunson Drlg. Co. et al No. 1 Weisner, SE SW SE sec. 31-13-17w. T.D. 3,651 ft.; P.B. 3,624 ft.; acd.; D.&A.
Colonial Oil Co. and Bernheimer No. 1 Albert, SW SW NE sec. 31-12-18w. Set 8-in. csg. 2,730 ft.; drlg. 3,209 ft.
Continental Oil Co. No. 1 Baumrucker, NE SW sec. 25-14-16w. Run 10-in. to 365 ft.
P. G. Reynolds et al No. 1 Karlin, NW cor. sec. 13-12-18w. H.F.W. 3,240 ft.; S.D. for csg.
C. E. W. Skiles et al No. 1 Jensen, SW SE NE sec. 26-12-18w. S.D. 2,910 ft.

Ellsworth County

Hunkle et al No. 1-A Andrea, NE SE sec. 7-17-10w. Run 15-in. 400 ft.

Ford County

Olson Oil Co. et al No. 1 Fowler, C SW sec. 26-27-22w. Drlg. 5,459 ft.

Greenwood County

Eagle Oil Co. No. 1 Stine, NE NE SE sec. 13 28-10. U.R. 8-in. 730 ft.
John Nichols et al No. 1 Central Life, SE SW sec. 35-25-12. Spd. and S.D.
Whittaker & Johnson No. 1 Cannon, CEL SE NW sec. 8-26-13. Set 6-in. 1,185 ft.; fsg.

Harvey County

Allison et al No. 1 Hawks, SE SW NE sec. 16-24-1w. Drlg. 2,600 ft.

Jackson County

Lemmick Oil Co. No. 1 Marble Savings Bank, NE cor. sec. 26-9-14. Spd. and S.D.

Marion County

Tom Palmer, Inc. No. 1 Matz, SW SE SE sec. 8-19-1e. Drlg. 1,850 ft.

McPherson County

C. E. Ash Drlg. Co. No. 1 Broman, NE NE NW sec. 19-17-4w. Wilcox 3,724 ft.; H. F.W. 3,730 ft.; T.D.; S.D.
Boyle & Grossman No. 1 Diener, SE SE NE sec. 35-19-1w. Drlg. 2,375 ft.
Carter Oil Co. No. 1 Hoglund, C W½ SW NW sec. 8-17-3w. Set 12-in. 228 ft.; W.O.C.
Fred C. Frank et al No. 1 Doles, SW NW NE sec. 12-19-1w. Set 8-in. 2,775 ft.; S.D.
Phillips Pet. Co. No. 1 Galle, NW NE sec. 11-21-2w. Set 13-in. 157 ft.; W.O.C.

Meade County

Pacific Mid-West Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. Drlg. 900 ft.

Mitchell County

Geo. Siedhoff et al No. 1 Greiss, SW SW SE sec. 16-8-10w. Sil. 4,047-53 ft.; D.&A.

Ness County

Continental Oil Co. No. 1 Olson, SW NW SE sec. 5-18-25w. Drlg. 1,000 ft.
Marshall Drlg. Co. et al No. 1 Anderson, SW NW sec. 23-16-24w. Spd. and S.D.
Trojan O. & G. Co. No. 1 Moses, C SW NW sec. 10-18-25w. Fsg. 300 ft.
Trojan O. & G. Co. No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. Fsg. 3,265 ft.

Pawnee County

Phillips Pet. Co. No. 1 Johnson, C NE NW sec. 8-20-19w. Drlg. 2,605 ft.
Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Jantz, SW cor. sec. 25-20-16w. Sil. 3,804-09 ft.; R.U.S.T.

Phillips County

C. W. Davidson et al No. 1 Elliff, SE NE NE sec. 35-5-18w. S.D. 350 ft.

Pratt County

Colonial Oil Co. et al No. 1 Hays, SE SW sec. 4-26-12w. Sil. 4,299 ft.; T.D. 4,325 ft.; D.&A.
E. W. Hamilton and Robert Ray No. 1 Holland, SW NW SE sec. 6-26-12w. Drlg. 3,800 ft.
Skelly Oil Co. et al No. 1 Adams, SE NW NE sec. 2-28-11w. T.D. 4,300 ft.; fsg.

Reno County

Albert Austin No. 1 Schwiethale, SW SW NE sec. 17-23-10w. Drlg. 2,300 ft.
Lib Phillips et al No. 1 McPheeters, NE NE NW sec. 22-26-8w. Spd. and S.D.
Sam Schneider et al No. 1 Kroecker, NE cor. sec. 12-22-5w. U.R. 6-in. 3,545 ft.
Westgate-Greenland et al No. 1 Popp, SW SW NE sec. 7-25-4w. T.D. 3,591 ft.; wtr. in hole; S.D.O.

Rice County

Gillespie et al No. 1 Strong, NE NW sec. 9-18-8w. Spd. and S.D.
John Hanna et al No. 1 Marshall, NE NW NW sec. 30-18s-8w. S.D. 1,530 ft.
Fred Phillips et al No. 1 Oden, SE NE NW sec. 22-20-7w. Drlg. 2,360 ft.
Skiles et al No. 1 Campbell, SE SE NE sec. 28-19-9w. T.D. 2,957 ft.; S.D.
W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. S.D. 3,100 ft.

Rooks County

C. R. Craft et al No. 1 Ziegler, NE SW sec. 8-10-16w. Drlg. 3,350 ft.
Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,326 ft. pmpd. 50 B.O. and 35 B.W. in 8 hrs.; fsg.
Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. S.D. 200 ft.
Producers Oil Co. No. 1 Tucker, SW SE NW sec. 23-10-17w. Drlg. 1,636 ft.

Texas Co. No. 1 McCarroll, C W½ W½ NW sec. 29-10-17w. Drlg. 3,705 ft.
Texo Trading Co. No. 1 Probst, SW SW NE sec. 18-6-19w. Drlg. 2,500 ft.

Rush County

Duwe & Brouk No. 1 Lebsack, SE SE NE sec. 13-16-16w. Sil. 3,492-95 ft.; 1,500 ft. sulfur water in hole in 2½ hrs.; T.L. 3,512 ft.; S.D.O.
Wakefield & Brouk No. 1 Kerbs, NW NW SE sec. 11-17-16w. Drlg. 2,215 ft.

Russell County

Emrichs et al No. 1 Anderson, NE SE SW sec. 33-15-11w. Spd. and S.D
Jones & Shelburne No. 1 Short, NE cor. sec. 12-15-12w. Drlg. 970 ft.
Murfin and Vernon O. & G. Co. No. 1 Pearson, NE cor. sec. 31-15-15w. Drlg. 2,405 ft.
Parks No. 1 Opdycks, SW cor. sec. 20-14-13w. Gorham sd. 3,178-80 ft.; pot. 353 B.O.; comp.
C. L. Price No. 1 Sebesta, NE NE sec. 36-15-11w. Set 5-in. 3,260 ft.; wtr. and S.S.O. at 3,284 ft.; U.R.
Winkler & Koch No. 1 Jones, SE SE NW sec. 22-14-13w. Sil. 3,180 ft.; S.D.O.

Sedgwick County

Continental O. Co. et al No. 1 Oehlert, NW SE sec. 7-27-4w. Drlg. 3,865 ft.
Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. Fsg. 1,550 ft.
McKnab No. 1 Garrett, SE SW SW sec. 18-29-2e. S.D. 100 ft.
I. W. Murfin et al No. 1 Martin, SE NW sec. 32-28-1e. T.D. 3,491 ft.; acd.; swb. 45 B.O. in 24 hrs.
National Ref. Co. No. 1 fee, SE NE SE sec. 26-27-2e. T.D. 3,099 ft.; P. 27 B.W. first hr. and 91 B.O., no wtr. next 5 hrs.; P.B. 3,098 ft.
M. Steinbuchel et al No. 1 Shaffer, SW SW NW sec. 18-25-1e. Drlg. 2,640 ft.
Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. Drlg. 2,400 ft.

Stafford County

W. P. Faulkner No. 1 Moses, NW SW sec. 9-22-13w. Set 10-in. 2,445 ft.; C.O.
Tom Palmer No. 1 Fair, SE NE SW sec. 10-22-11w. Drlg. 1,700 ft.
Fred Rust et al No. 1 Drach, NE SW sec. 12-22-13w. Sil. 3,693 ft.; T.D. 3,705 ft.; acd.; P. 90 B.O. in 1 hr. after a head.
Stanolind O. & G. Co. No. 1 Tiechman, SE cor. sec. 13-22-13w. Perf. 3,747-56 ft.; H.F.W.; P.B. 3,733 ft.
Torry & Feaster et al No. 1 McConnaughay, NE SE NW sec. 8-24-13w. Drlg. 4,040 ft.

Stevens County

United Prod. Co. No. 1 Beardsley, C N½ sec. 12-31-35w. T.D. 2,722 ft.; acd.; est. 3,700,000 ft. gas; comp.

Sumner County

Cities Service Oil Co. No. 1 McCoy, SE SW sec. 11-35-2e. Drlg. 3,690 ft.
W. M. McKnab No. 1 Blair, SW cor. sec. 7-30-1e. T.D. 3,869 ft.; swbs. 75 to 100 B.O.P.D.
Magnolia Pet. Co. No. 1 Baird, SW SE SE sec. 2-30-4w. T.D. 4,401 ft.; P.B. 4,395 ft.; pot. 378 B.O. and 2½ B.W.; comp.
R. J. Wixson No. 1 Newton, SE SE sec. 21-30-2e. Drlg. 2,975 ft.

Trego County

Carlock No. 1 Kinzel, SW SW sec. 9-13-22w. Spd. and S.D.
Thurman Hill et al No. 1 Lawson, SW SW NW sec. 7-14-22w. Drlg. 4,250 ft.
Phillips Pet. Co. No. 1 Trego, C SE SW sec. 14-12-23w. T.D. 4,290 ft.; D.&A.

Woodson County

Chas. Reeser et al No. 1 Weide, NW SE sec. 18-25-14. Drlg. 750 ft.

Jefferson County

Massad & Swansberger No. 1 Barrett, NE SE SE sec. 14-6s-6w. T.D. 1,890 ft.; S.D.

Johnston County

Patton et al No. 1 McCrummins, C SW SW NE sec. 16-1s-6e. S.D. 1,380 ft.
W. T. Sheldon No. 1 Chapman, C NW NW sec. 26-4s-6e. T.D. 2,510 ft.; fsg.

Marshall County

Paul Robb et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. O.W.D.D.; C.O. to 720 ft.; S.D.

Murray County

Meyer & Greenup No. 1 Arbuckle, NW NW NE sec. 18-2s-3e. Spd. and S.D.
O. O. Owens No. 1 Fryer, NE SE NE sec. 34-1s-3e. T.D. 2,574 ft.; 1,400 ft. W.I.H.; S.D.
Sinclair Prairie Oil Co. No. 1 Lancaster Trust, C SW NE sec. 10-1-2e. T.D. 4,404 ft.; freeing stuck pipe.

Pushmataha County

Erle Halliburton et al No. 1 Bagwell, SW NE NE sec. 30-3s-15e. T.D. 6,010 ft.; S.D.O.

Stephens County

Jack Cohen No. 1 Pierce, NE NE NW sec. 24-2s-6w. T.D. 1,877 ft.; lost 80 ft. drill pipe in hole; abd.
Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; P.B. 9,164 ft.; acidized, shot, no results; swabbing.
Chas. Newsom No. 1 Pfile, SW cor. sec. 1-2s-7w. T.D. 3,551 ft.; S.D.O.
Ed Parsons and Olson Drlg. Co. No. 1 Blake, C SW NW sec. 22-2n-8w. Drlg. 5,745 ft.

Tillman County

Cavens et al No. 1 Southerland, SW SW NW sec. 35-4s-16w. T.D. 44 ft.; S.D.
Tom Walker No. 1 Bowman, SW SW NW sec. 10-4s-17w. S.D. 200 ft.

OKLAHOMA

Week Ending November 20

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Granite Wash; S.O. 2,213-20 ft.; S.D.

Caddo County

Indian Terr. Illum. Oil Co. No. 1 Dome-Bo, C NE SE sec. 29-6-10w. Drlg. 5,685 ft.; shale.

Cleveland County

Harper-Turner No. 1 Pollock, C W½ NW NW sec. 13-9-2w. T.D. 6,850 ft.; drl. pipe stuck.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; P.D. 3,015 ft.; bad csg.; S.D.

Garfield County

H. R. Hollenback et al No. 1 Clark, NW cor. sec. 34-21-6w. Layton 5,190 ft.; drlg. 5,325 ft.

Garvin County

Carter Oil Co. No. 1 Potts, C E½ SE NW sec. 36-1n-3w. Simpson 3,210 ft.; T.D. 4,155 ft.; D.&A.
B. C. D. Edwards No. 1 Clark, NE cor. sec. 16-3n-3e. T.D. 2,676 ft.; drill pipe stuck.

Grady County

Doyle Pet. Co. No. 1 Huffine, NW NW SE sec. 30-5-8w. Drk.
Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. Drlg. 9,040 ft., shale.

Grant County

Magnolia Pet. Co. No. 1 Reynolds, NE NE SE sec. 19-25-5w. Drlg. 2,715 ft.

Greer County

J. I. Medlin et al No. 1 Broudie, NW cor. sec. 5-6n-20w. T.D. 90 ft.; S.D.

Hughes County

Burke-Greis Oil Co. No. 1 Rhea, SW SW SE sec. 14-10-9. H.F.W. 3,895 ft.; D.&A.
Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. Cromwell 4,398 ft.;T.D. 4,460 ft.; F. 131 B.O. in 23 hrs.; 19,800,000 ft. gas; coring.
Pure Oil Co. No. 1 Rogers, SE SE NE sec. 18-8-12. Drlg. 4,650 ft.

Kay County

E. W. Jones et al No. 1 Dorse, SE SW NW sec. 25-26-1w. T.D. 2,188 ft.; S.D. repairs.
E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. Set 7-in. 2,412 ft.; T.D. 2,415 ft.; S.D.O.

Kiowa County

Hughes & Reese No. 1 Fultz, SE cor. sec. 10-6-18w. Drlg. 1,005 ft., sandy lime.

Lincoln County

C. L. Carlock No. 1 Young, C N half NW NW sec. 23-15-5. First Wilcox 4,474 ft.; reaming down core hole.

Logan County

Texas Co. No. 1 Roper, C W½ SW SE sec. 22-15-1e. Drlg. 5,240 ft.

Okmulgee County

Phillips Pet. Co. No. 1 Wood, NW SW SW sec. 31-11-13. R.U.S.T.

Payne County

Mid-Continent Pet. Corp. No. 1 Ramsey, SW SW NW sec. 18-18-2e. B.R.
Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Bennett, NE SW NE sec. 31-19-4. Set 12½-in. 197 ft.; T.D. 211 ft.

Pittsburg County

Okla. Dist. Oil Co. No. 1 Beeler, NE NE SW sec. 7-7-14. Mayes 5,670 ft.; drlg. 5,840 ft.
Phillips Pet. Co. No. 1 Gilcrease, NW NW SE sec. 16-7-12. Second Wilcox 5,457 ft.; drlg. 5,495 ft.

Pontotoc County

H. W. Lee No. 1 Weatherly, NW SE NW sec. 24-1n-7. Rlg.
Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. T.D. 3,320 ft.; drill pipe stuck; S.D.

Seminole County

W. C. McBride, Inc., No. 1 Jackson, NE SW sec. 16-6-7. Spd.
W. B. Osborn et al No. 1 Harris, NW cor. sec. 11-6-5. Drlg. 2,600 ft.
Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Salina, SE NE NW sec. 4-5-6. T.D. 3,317 ft.; P.B. 3,185 ft.; acd.; P. 80 B.O. in 7 hrs.
H. V. Woodson and Marydun Oil Co. No. 1 Gilliland, SE SW sec. 24-11-7. Set 10¾-in. 60 ft.

Texas County

Hagey et al No. 1 Becker, C NE sec. 4-1n-13ecm. Spray S.W. 2,910 ft.; T.D. 3,010 ft.; to P.B.
Hagey et al No. 1 Peck, C NE sec. 6-1n-13ecm. Set 7-in. 2,766 ft.; W.O.C.

Washita County

John Koberg No. 1 Harms, NW NW NE sec. 6-10-16w. T.D. 4,190 ft. (cor.); D.&A.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. T.D. 1,502 ft.; fsg.

Bryan County

Southern Oil Co. No. 1 Henry, NW NW NE sec. 10-8s-7. Drk.

Carter County

E. M. Boring No. 1 Sullivan, SE SE SW sec. 6-5s-1e. T.D. 2,508 ft.; D.&A.
Lloyd Noble No. 1 Revelle, SW SE sec. 31-3s-2w. Drlg. 2,412 ft.

Choctaw County

V. K. Chapman and T. N. Low No. 1 Hallum, NE NW NW sec. 4-7s-20. Drlg. 240 ft.

Coal County

Carter Oil Co. No. 1 Claytor, C W½ NE SW sec. 27-2n-9e. At 6,355 ft.; swb. 144 B.O. in 10 hrs., swb. down; T.D. 6,415 ft.; Halliburton test.
Phillips Pet. Co. No. 1 Beck, SE SW SW sec. 6-1n-9e. Drlg. 5,250 ft.

Cotton County

J. W. Amyx No. 1 Ash, SE cor. sec. 7-4s-10w. Drlg. 1,257 ft.
Bowers & Wise No. 1 Pendergraft, NW SE SW sec. 4-4s-12w. Spd. 16 ft.; S.D.

ARKANSAS

Calhoun County

Hayner, Reaves & Hose No. 1 Brandon, SW NW SW sec. 34-11-13. Drlg. 3,340 ft.

Columbia County

Kerr-Lynn Oil Co. No. 1 Barnett, sec. 14-17-20. Cg. 5,783 ft.
E. O. Olds No. 1 Dennis, NE SE SW sec. 4-17-21. S.D. 4,065 ft.
Standard of La. No. 1 J. P. McKean, SW sec. 8-16-22w. Flwg. avg. 15 bbls. hrly.; T.D. 7,259 ft.
Tide Water-Seaboard Oil Co. No. 1 Crumpler, SW NE SW sec. 24-17-19w. Cg. 5,704 ft.

Miller County—Rodessa

F. W. Burford No. 4 Ahren, SE SE SW sec. 10-20-28. Comp. 150 bbls. dly.; T.D. 6,067 ft.
F. W. Burford No. 1-A J. O. Gerrald, NE cor. sec. 15-20-28. Comp. 646 bbls. 21 hrs.; T.D. 6,070 ft.
H. L. Hunt No. 5 Womack, SW SW SE sec. 10-20-28. 7-in. 6,061 ft.; T.D. 6,064 ft.
Rodger Lacy No. 1 Sartor, SE W½ sec. 15-20-28. Drlg. 2,445 ft.
Rodger Lacy No. 2 Grogan, NE E½ W½ sec. 15-20-28. Drlg. 2,510 ft.
W. M. Layton, No. 3 Terry, SE W½ W½ sec. 14-20-28. 7-in. 5,995 ft.; T.D. 6,096 ft.
McClanahan et al No. 4 Capps, NE NE SW sec. 11-20-28. Comp. 50 bbls. dly.; T.D. 6,075 ft.
McClanahan et al No. 1 Easton, S½ NW SW sec. 12-20-28. Drlg. 5,400 ft.
McClanahan No. 1 T. J. Hopkins, SE SW NE sec. 11-20-28. Comp. 15 bbls. hrly.; T.D. 6,150 ft.
McClanahan et al No. 2 T. J. Hopkins, C sec. 11-20-28. Cg. 6,040 ft.
McMurray No. 1-A Thomas, NW E½ W½ sec. 13-20-28. Drlg. 5,653 ft.
McMurray No. 2-B Thomas, SW SW SE sec. 12-20-28. Drlg. 5,589 ft.
J. R. Ostrom No. 1 J. O. Gerrald, NW E½ sec. 15-20-28. C.O.; T.D. 6,079 ft.
Parks et al No. 1 Gerrald, sec. 11-20-28. Cg. 6,183 ft.
Skelly Oil Co. No. 1 Thomas, SW SE SW sec. 12-20-28. 7-in. 6,132 ft.; T.D. 6,140 ft.
A. M. Sutton No. 1 Cross, SE cor. SE NE sec. 11-20-28. Drlg. 6,000 ft.
S. O. Thomason No. 1 Greer, SW SW NW sec. 11-20-28. Stuck D.S.; T.D. 5,809 ft.
Texas Canadian Oil Co. No. 1 Thomas, sec. 12-20-28. Drlg. 5,490 ft.

Miller County—Other

Odel Hinson No. 1 Montana Realty Co. O.W.D.D.; S.W.; abd. 5,150 ft.

Pulaski County

A. L. Kitselman, No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. Cg. 1,489 ft.

Union County—Schuler

E. M. Jones No. 2 Marine Oil Co., SW NW SE sec. 17-18-17. Cg. 7,618 ft.
E. M. Jones No. 3 Marine Oil Co., NE NW SE sec. 17-18-17. Drk.
E. M. Jones No. 4 Marine Oil Co., SE SW SE sec. 17-18-17. Drlg. 6,320 ft.
Lion Oil Ref. Co. No. 1-A M. D. Justiss; NE NW NE sec. 19-18-17. Drlg. 6,250 ft.
Lion Oil Ref. Co. No. 1 Marine Oil Co., NE SE SW sec. 17-18-17. Drlg. 6,115 ft.
Lion Oil Ref. Co. No. 3-B Edna Morgan, NE NW SE sec. 18-18-17. Drlg. 5,025 ft.
Lion Oil Ref. Co. No. 4-B Edna Morgan, NW SW SE sec. 18-18-17. Drlg. 2,100 ft.
Lion Oil Ref. Co. No. 1-C D. and J. C. Morgan, NE SE SE sec. 18-18-17. Drlg. 3,360 ft.
Marine Oil Co. No. 2 M. D. Justiss, sec. 18-18-17. Drlg. 5,800 ft.
Phillips Pet. Co. No. 1 E. Gan, SW SE NE sec. 18-18-17. Cg. 7,623 ft.
Phillips Pet. Co. No. 1 Jennings, NW SW NE sec. 18-18-17. Drlg. 3,226 ft.
Alice Sidney Oil Co. No. 2 Morgan, SE NE SE sec. 18-18-17. U.R.; T.D. 7,700 ft.
Alice Sydney Oil Co. No. 3 Morgan, NW NE SE sec. 18-18-17. Drlg. 2,100 ft.

Union County—Other

Ark. So. Oil Co. No. 1 Simmons, SE NW sec. 15-18-18. W.O.S.R. 2,283 ft.
W. D. Winfield No. 2 Southern Kraft Corp., sec. 18-16-14. 7-in. 2,721 ft.; T.D. 2,728 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

F. W. Burford No. 1 Pitts, NW sec. 1-23-16. Comp.; gauge 13,400,000 ft. gas; T.D. 6,010 ft.
F. W. Burford No. 1 R. A. Terry, NW E½ sec. 2-23-16. Comp. 1,200 bbls. dly.; T.D. 6,042 ft.
F. W. Burford No. 4 Terry, SE NE sec. 2-23-16. Cg. 6,020 ft.
F. W. Burford No. 1 U. S. Govt., NE SE SW sec. 6-23-16. Rng. Schlumberger; T.D. 6,045 ft.
Magnolia Pet. Co. No. 4 Mary S. Atkins, SW SE sec. 7-23-15. Comp. 10,000,000 ft. gas dly.; T.D. 5,900 ft.
Magnolia Pet. Co. No. 2 G. W. Hardy, NW SW sec. 1-23-16. Drlg. 6,980 ft.
Standard Oil of La. No. 1 Mrs. Alice N. Gibson, NW NE SW sec. 10-23-16. 7-in. 5,895 ft.; T.D. 5,947 ft.
Union Prod. Co. No. 6 Starke, SW cor. sec. 8-23-16. D.S. stuck 5,860 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. Tstd. S.W.; T.D. 5,690 ft.
H. L. Hunt and Seaboard No. 1 Federal Ld. Bk., SW sec. 10-16-16. Tstd. est. 5,000,000 ft. gas; shut in; T.D. 6,867 ft.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. S.D. 698 ft.

Caddo Parish

W. D. Chew No. 3 Spell, NE SW SE sec. 29-21-15. W.O.S.R. 1,575 ft.
Mrs. O. P. Clement No. 1-B Caddo Lvy. Bd., NE sec. 5-20-16. Setting csg. 2,160 ft.
Driscoll Jt. No. 1 Muslow, SE NW NE sec. 4-20-15. Cg. 2,135 ft.
W. Dromgoole No. 1 School Bd., SE NW sec. 16-19-14. 7-in. 2,425 ft.; T.D. 2,450 ft.
A. R. Hancock No. 1 Helpman, NE SW sec. 6-21-16. Comp. 35 bbls. dly.; T.D. 1,010 ft.
W. H. Harrison No. 2 Shoreline Crystal, SE NW NE sec. 23-21-16. 4½-in. 1,034 ft.; T.D. 1,040 ft.
La. Oil Prod. Co. No. 11-B Muslow, sec. 4-20-15. Comp. 20 bbls. dly.; T.D. 2,220 ft.
O. O. Olsen No. 1 R. T. Sharp, W½ NW sec. 15-18-16. Drlg. 5,155 ft.
Frank Perkins No. 2-A Stiles, SW NW SW sec. 33-21-16. Comp. 100 bbls. dly.; T.D. 1,870 ft.
Prairie River Synd. No. 1 Hutchinson, SW NW sec. 15-15-12. S.D. 9,141 ft.
Sam M. Richardson No. 1 Sentell, SW E½ sec. 9-19-14. Comp. 20 bbls. dly.; T.D. 2,460 ft.
J. J. Shulman No. 1 Hobbs, NW sec. 28-21-15. Fsg. for 6-in.; T.D. 1,400 ft.
Simplex Oil Co. No. 12 Glassell, sec. 10-20-15. Comp. 20 bbls. dly.; T.D. 2,195 ft.
Standard Oil Co. No. 4 McCoy, sec. 10-23-16. Drlg. 2,730 ft.
R. G. Trippett No. 1 Sharpe, sec. 4-23-16. 13⅜-in.; drlg. 3,265 ft.

Claiborne Parish

Atlantic Refg. Co. No. 2-B Tatum, E½ NW SW sec. 32-21-4. Loc.
Atlantic Ref. Co. No. 2-C Patton, E½ SW SE sec. 29-21-4. Tstg. 5,203 ft.
Crescent Drlg. Co. No. 1 Fowler, E½ SW NW sec. 33-21-4. Rng. csg.; T.D. 5,285 ft.
Harry Hanbury No. 1-E R. Vaughn, S½ NE SE sec. 25-21-5. Drlg. 4,140 ft.
W. L. McClanahan No. 1 J. T. Lewis, W½ SW SE sec. 25-20-7. Drlg. 3,000 ft.

A. O. Olsen No. 1 English, E½ SE SE sec. 29-21-4. Drlg. 4,625 ft.
A. O. Olsen No. 5-A Patton, NE SW sec. 30-21-4. Rng. csg.; T.D. 5,206 ft.
C. R. Schuster No. 1 S. Lloyd, SW SW sec. 2-20-5. Drlg. 1,760 ft.
Sloan & Zook No. 2-C S. L. Patton, sec. 1-20-5w. Drlg. 5,265 ft.
Tippett Drlg. Co. No. 2 C. S. L. Patton, sec. 1-20-5. Comp. 487 bbls. 8 hrs.; T.D. 5,335 ft.
Union Prod. Co. No. 2 Brownfield, sec. 5-19-5. O.W.D.D.; drlg. 7,456 ft.
G. H. Vaughn No. 2 Eppinger, N½ SW SW sec. 29-21-4. Fsg. D.S.; T.D. 4,700 ft.

La Salle Parish

T. & J. Inc. No. 2 Tullos, SE NE sec. 26-10-1e. Drlg. 1,500 ft.

Concordia Parish

Coastal Mineral & Dev. Co. No. 1 Winsten, sec. 23-7-9e. 7-in. 2,028 ft.; tstg.; T.D. 2,090 ft.

De Soto Parish

Clear Lake Oil Co. No. 1 J. A. Woolums, NW sec. 29-12-12. Wtg. on csg.; T.D. 2,690 ft.
Kingston Oil Co. No. 1 Scott, SE NE sec. 32-14-13. Drlg. 2,777 ft.

Lincoln Parish

Gulf Ref. Co. No. 1 M. Patton, C sec. 6-20-4. Drlg. 5,171 ft.
Ludel Oil Corp. No. 1 Gill, NE NE NW sec. 36-20-2w. S.D. 6,000 ft.
Magnolia Pet. Co. No. 1-B F. Corbin, N½ NW NW sec. 5-20-4. 7-in. 5,241 ft.; T.D. 5,242 ft.
E. H. Moore, Inc. No. 1 Arcadia Comm. Bk., C NW sec. 22-18-5. D.&A.; T.D. 6,210 ft.
Red Iron Drlg. Co. No. 2 T. F. Patton, NW SW NE sec. 6-20-4. Drlg. 4,938 ft.

Red River Parish

Arkansas Fuel Co. No. 1 Frankland Realty Co., NW sec. 20-11-9. 10¾-in. 2,001 ft.
J. F. Lent et al No. 1 Chicago Coal & Ld. Co., SE sec. 17-13-11. S.D. 1,604 ft.

Sabine Parish

Fox & Phillips No. 1 Cook Ld. Co., SW SE NW sec. 1-9n-12w. S.D. 2,035 ft.
Gold Oil Co. No. 1 Darby, N½ SE sec. 21-7-11. Tstg.; T.D. 2,586 ft.
Hunter Co. No. 1 Long Bell Lbr. Co., sec. 23-7-13. Drlg. 1,750 ft.
Major Oil Co. No. 1 Graham, SE NE NE sec. 19-9-13. Comp. 36 bbls. dly.; T.D. 1,710 ft.
Remine et al No. 1 4-L Co., SW SW sec 7-5-12. Drlg. 4,578 ft.

Tensas Parish

H. M. Jones No. 2 Chicago Mill & Ld. Co. NE SW sec. 31-12-10e. R.U.

Union Parish

Joe Modisett No. 1 Frost Lbr., sec. 14-21-1e. Drlg. 4,926 ft.

Webster Parish

V. L. Foster No. 2 J. M. Mixon, SE sec. 21-21-10. Drlg. 7,480 ft.
Magnolia Pet. Co. No. 4 Aarnes-Cox, NW sec. 22-21-10. Comp. 700 bbls. dist.; 3,000,000 ft. gas 8,423 ft.
Magnolia Pet. Co. No. 1 Crichton Hrs., NE NW sec. 33-21-10. 9⅝-in. 5,837 ft.; T.D. 5,862 ft.
Magnolia Pet. Co. No. 7 Marshall, SW SE sec. 21-21-10. Drlg. 5,208 ft.
Ohio Oil Co. No. 2 Bodcaw Acct. 4, SW SE NW sec. 24-21-10. Drlg. 4,621 ft.
Ohio Oil Co. No. 48 Bodcaw Acct. 2, SE sec. 15-21-10. Drlg. 4,405 ft.
Ohio Oil Co. No. 2 Warren Cox, SE sec. 23-21-10. Drlg. 5,430 ft.
Standard Oil Co. of La. No. 7 Mrs. M. F. Davis, NE NE NW sec. 23-21-10. Drlg. 8,258 ft.
Standard Oil Co. of La. No. 2-B Mrs. M. E. Gray, NE NE NW sec. 26-21-10. Rng. Schlumberger 8,117 ft.
United Gas No. 6 Tillman, NE sec. 28-21-10. Drlg. 6,966 ft.
Woodley Pet. Co. No. 5-B M. E. Gray, sec. 27-21-10. 9⅝-in. 5,646 ft.

SOUTH LOUISIANA FIELDS

Anse La Butte—St. Martin Parish

Anse La Butte Oil Corp. No. 1 Billeand, sec. 117-9s-5e. T.D. 832 ft.; 7-in. csg. 790 ft.; swb. S.W.; cmt. off bttm.; W. O.S.R.
Crusader Pet., Inc., No. 1 Central Oil Co., sec. 86-9s-5e. 10¾-in. csg. 465 ft.; cd. sd. 2,101 ft.

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 910 ft.
Texas Co. No. 15 State, sec. 20-22s-18e. Drlg. sd. 5,259 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 5-A Wilberts, sec. 75-9s-10w. T.D. 4,527 ft.; top salt 4,306 ft.

Bayou Cocoiriz—Terrebonne Parish

Shell Pet. Corp. No. 3-B Realty, sec. 18-17s-15e. 16-in. csg. 117 ft.; drlg. sd. 9,182 ft.; rec. 23 bbls. of oil on D.S.T. 9,060-67 ft.; T.D. 9,500 ft.; oil sd.; W. O.C.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 St. Charles Ld. Co., sec. 38-15s-20e. 10¾-in. csg. 2,698 ft.; drlg. sh. 7,897 ft.

Big Lake—Cameron Parish

Union Sulphur Co. No. 1 P. J. Hebert, sec. 18-12s-8w. 6⅝-in. csg. 8,441 ft.; T.D. 9,289 ft.; D.S. stuck; P.B.; S.D.; W.O.O.
Union Sulphur Co. No. 2 J. O. Hebert, sec. 18-12s-8w. Core sd. show oil 8,442-63 ft.; drlg. sd. 8,877 ft.

Black Bayou—Calcasieu Parish

Shell Pet. Corp. No. 36 Watkins. T.D. 5,033 ft.; run 7-in. csg.; tstg.

Bosco—Acadia Parish

Superior Oil Co.-Pure Oil Co. No. 5 Larcade, sec. 35-8s-3e. T.D. 10,216 ft.; P.B.; sdrkd.; drlg. sh. 8,096 ft.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 19 Sch. Ld., sec. 16-14s-13w. T.D. 5,981 ft.; abd.
Magnolia Pet. Co. No. 21 Cameron Meadows, sec. 21-14s-13w. 13⅜-in. csg. 1,173 ft.; drlg. sd. and sh. 3,028 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 1 Dolph, sec. 36-13s-9e. T.D. 7,185 ft.; 7-in. csg. 6,904 ft.; perf. csg. 6,841-49 ft.; tstg.
Pan American Prod. Co. No. 1 Eucer, sec. 11-13s-9e. Drlg. sh. 6,829 ft.

Choctaw—Iberville Parish

Louisiana Crusader Oil Co. No. 1 E. B. Schwing, sec. 29-8s-11e. Drlg. sd. 4,257 ft.
Standard Oil Co. No. 8 Gay, sec. 52-9s-11e. Oil sd. gravel 863 ft.

Darrow—Ascension Parish

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. R.U.
Humble No. 12 Gumbel, sec. 33-10s-2e. 16-in. csg. 225 ft.; drlg. sdy. sh. 3,695 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 18 State, sec. 5-22s-16e. T.D. 7,606 ft.; P.B. 6,113 ft. to sdtrk.

Four Isle—Terrebonne Parish

Texas Co. No. 9 L.L.&E., sec. 24-21s-16e. T.D. 8,553 ft.; P.B. 3,881 ft.; sdtrk.; drlg. sd. and L. 5,691 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 24 State, sec. 37-23s-33e. T.D. 5,426 ft.; 7-in. csg. 5,150 ft.; perf. 4,960-98 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 7 Kaufman, sec. 13-9s-8w. T.D. 7,079 ft.; 5-in. csg. 7,052 ft.; swbd. S.W.; P.B. to 6,898 ft.; swbd. S.W.; fsg. for screen; P.B. 7,057 ft.; sdtrkd.; T.D. 7,057 ft.; tstd.; gas and S.W.
Union Sulphur Co. No. 2 Mary McIvor, sec. 14-9s-8w. T.D. 7,165 ft.; 5-in. csg. 7,165 ft.

Hackberry—Cameron Parish

W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.
W. T. Burton No. 1 Porter Ellender, sec. 27-12s-10w. T.D. 5,578 ft.; 7-in. csg. 4,950 ft.; P.B. 4,910 ft.; perf. csg. 4,891-4,907 ft.; swbd. dry; S.D.
W. T. Burton No. 2 Porter Ellender, sec. 27-12s-10w. Drlg. sh. 1,240 ft.
F. J. LeBlanc No. 1 Doiron, sec. 36-12s-10w. R.U.R.
M. P. O'Meara No. 1 Rigmaden heirs, sec. 22-12s-10w. Drlg.
Stanolind O. & G. Co. No. 6 Duhon, sec. 22-12s-10. T.D. 4,756 ft.; 7-in. csg. 4,684 ft.; showing dry gas.
Stanolind O. & G. Co. No. 7 Duhon. T.D. 3,696 ft.; 7-in. csg. 3,342 ft.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. Drlg.
Stanolind O. & G. Co. No. 26 Gulf Ld., sec. 22-12s-10w. 10¾-in. csg. 1,644 ft.; T.D. 4,513 ft.; P.B. 3,175 ft.; sdtrkd.; drlg. sh. 3,482 ft.
Stanolind O. & G. Co. No. 27 Gulf Ld., sec. 22-12s-10w. Drlg. sh. 800 ft.
Texas Co. No. 3-B State, sec. 12-12s-9w. T.D. 7,695 ft.; P.B.; sdtrkd.; dry; sd. and L. 6,257 ft.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. Drlg. 610 ft.

Lockport-Cameron Parish

Magnolia Pet. Co. No. 35 Miller, sec. 9-10s-9w. Drlg. sh. 6,999 ft.; oil sd. cd. 6,929-31 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Teche Sugar Co., sec. 58-13s-8e. Drlg. sh. 1,500 ft.

Jennings—Acadia Parish

Frank W. Bennett et al No. 1 Brethern and Christ Church, sec. 41-7s-2w. T.D. 7,070 ft.; 6⅝-in. csg. 6,990 ft.
W. T. Burton No. 4 Roboria, sec. 41-9s-3w. T.D. 7,023 ft.; 7-in. csg. 7,023 ft.; failed to flow; cored deeper.
Crusader Pet., Inc., No. 1 E. H. Grace, sec. 45-9s-2w. T.D. 3,641 ft.; 7-in. csg. 3,602 ft.
Glassell & Glassell No. 2 McFarland, sec. 41-9s-2w. T.D. 6,975 ft.; 7-in. csg. 6,770 ft.; I.P. 520 B.P.D., 14/64-in. ck.
Glassell & Glassell No. 4 Trushell, sec. 42-9s-3w. Drlg. sd. 5,717 ft.
Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. Drlg. sd. 2,149 ft.
Jolly Pet. Co. No. 2 McFarlain, sec. 41-9s-2w. Drk.
M. P. O'Meara No. 1 Moresi, sec. 41-9s-2w. Drlg. sh. 2,102 ft.
Jolly Pet. Co. No. 5 Jennings-Haywood, sec. 46-9s-2w. Drk.
Reiter Foster Oil Co. No. 2 Crusel, sec. 42-9s-2w. T.D. 3,908 ft.; P.B. 3,746 ft.; perf. csg. 3,700-23 ft.
Superior Oil Co. No. 1 Julis Clement, sec. 46-9s-2w. Drlg. 1,205 ft.
Shell Pet. Corp. No. 3 Community, sec. 40-9s-2w. Drlg. sh. 6,291 ft.
Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. Drlg. sh. and L. 4,742 ft.
Superior Oil Co. No. 8 Leckelt, sec. 42-9s-2w. Drlg. sd. and sdy. sh. 6,919 ft.
Superior Oil Co. No. 7 Leckelt, sec. 42-9s-2w. Drlg. sd. and sh. 5,672 ft.
Superior Oil Co. No. 3 Moresi, sec. 41-9s-2w. T. D. 6,748 ft.; stuck D.S.; sdtrkg. 5,038 ft.; T.D. 7,684 ft.; 7-in. csg. 6,744 ft.

Lafitte—Jefferson Parish

Texas Co. No. 7 L.L.E., sec. 20-17s-24w. T.D. 10,275 ft.; run Schlumberger.
Texas Co. No. 8 Rigolet, sec. 29-17s-24e. 13⅜-in. csg. 1,923 ft.; drlg. sdy. sh. and L. 7,406 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 141 State, sec. 40-21s-19e. T.D. 3,641 ft.; 7-in. csg. 3,648 ft.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 7 Lafourche, sec. 12-18s-25e. 7-in. csg. 8,074 ft.; drlg. sh. 8,888 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 13 State, sec. 8-23s-18e. T.D. 6,605 ft.; D.S. stuck.

Lake Washington—Plaquemines Parish

Humble O. & R. Co. No. 25 Cockrell, sec. 35-20-26e. T.D. 6,357 ft.; recvd. 14 stands P.L.O.; 9⅝-in. csg. 5,263 ft.; 7-in. csg. 6,354 ft.; I.P. 450 B.P.D., ¼-in. ck.

Lockport—Calcasieu Parish

Magnolia Pet. Co. No. 35 Miller, sec. 9-10s-9w. Drlg. sh. 6,553 ft.; (no report).

Lake Long—Lafourche Parish

Fohs Oil Co. No. 2 State, sec. 65-17s-19e. R.U.
Fohs Oil Co. No. 3 State, sec. 65-17s-19e. 10¾-in. csg. 2,743 ft.; T.D. 9,539 ft.; sd. 9,517-33 ft. showed S.W.; cutting and pulling screen.

Leesville—Plaquemines Parish

Texas Co. No. 63 Leesville, sec. 27-12s-22e. Bldg. drk.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Frank Wurzlow, sec. 6-19s-19e. 13⅜-in. csg. 2,796 ft.; W.O.C.

New Iberia—Iberia Parish

Wm. Hellis No. 3 Schwing, sec. 57-12s-7e. T.D. 5,019 ft.; P.B. and sdtrkd.; salt 5,509 ft.; P.B. 2,650 ft.; T.D. 3,949 ft.; 7-in. csg. 3,920 ft.; L. 4,524 ft.. T.D. 4,552 ft.; P.B.; sdtrk.; drlg. sh. 4,225 ft.
Texas Co. No. 3 Bryant, sec. 25-12s-7e. R.U.
Wm. Hellis No. 9 Bernard, sec. 54-12s-7e. T.D. salt 5,171 ft.; P.B. and sdtrkd sd.&sh. 4,538 ft.; T.D. 4,661 ft.; salt; P.B.; sdtrk.; drlg. sdy. sh. 4,609 ft.
Wm. Hellis No. 10 Bernard, sec. 54-12s-7e. R.U.
Wm. Hellis No. 11 Bernard, sec. 54-12s-7e. T.D. 3,974 ft.; salt; sdtrk.; drlg. sdy. L. 4,447 ft.
Texas Co. No. 1 Burke, sec. 56-12s-8e. Drlg. sh. 5,035 ft.
Texas Co. No. 4 Duke, sec. 54-12s-7e. Drlg. sh. 1,177 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 H. J. Habetz, sec. 45-8s-1e. Dig. pits.
Humble O. & R. Co. No. 1 Habetz, sec. 3-9s-1e. Cg. sd. 8,102 ft.
Humble O. & R. Co. No. 1 L. Laumbrecht, sec. 4-9s-1e. T.D. 8,478 ft.; no show.

Roanoke—Jeff Davis Parish

Humble O. & R. Co. No. 9-B Devilbiss, sec. 11-9s-4w. T.D. 8,835 ft.; rng. 7-in. csg.
Superior Oil Co. No. 1 Ferguson, sec. 13-9s-4w. Drlg. sdy. L. 5,667 ft.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 L. L. Barnard et al, sec. 16-10s-4e. R.U.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp. No. 3-B Calcasieu Natl. Bank, sec. 27-7s-3w. R.U.

South Jennings—Jeff Davis Parish

Loffland Bros. No. 1 Fontenot, sec. 16-10s-3w. T.D. 9,003 ft.; 7-in. csg. 8,943 ft.; P.B. 8,904 ft.; perf. 8,869-94 ft.; showed 3,200 ft. S.W.; reperf. csg.

Starks—Calcasieu Parish

Capital Oil Co. No. 1 Lutcher-Moore, sec. 24-9s-13w. R.U.
Lutcher Moore No. 3 fee, sec. 19-8s-12w. Cd. sd. 4,356 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 853 fee, sec. 20-9s-10. T.D. 1,039 ft.; run 10¾-in. csg.
Union Sulphur Co. No. 852 fee, sec. 29-9s-10w. Drlg. sd. 3,689 ft.; T.D. 4,262 ft.; P.B. 3,750 ft.
Union Sulphur Co. No. 851 fee, sec. 29-9s-10w. Drlg. gumbo and L. 3,972 ft.

St. Martinsville—St. Martin Parish

Tide Water Oil Co. No. 1-B Smedes, sec. 18-11s-6e. T.D. 8,925 ft.; heaving sh.; abd.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 10 Harang, sec. 7-17s-20e. T.D. 6,977 ft.; P.B. 3,000 ft.; T.D. 6,144 ft.; 7-in. csg. 6,120 ft.; I.P. 643 B.P.D., ¼-in. ck.
Pan American Prod. Co. No. 12 Harang, sec. 7-17s-20e. Drlg. sh. 6,889 ft.
Pan American Prod. Co. No. 13 Harang, sec. 8-17s-20e. 16-in. 210 ft.; drlg. sh. 5,102 ft.
Pan American Prod. Co. No. 14 Harang, sec. 9-17s-20e. R.U.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 4 Manhattan Fruit Co., sec. 26-21s-30e. Drlg. sh. 7,473 ft.

Vinton—Calcasieu Parish

Katina Oil Co. No. 2 Vincent, sec. 34-10s-12w. T.D. 4,140 ft.; sdtrkd.; T.D. 3,215 ft.; 7-in. csg. 3,215 ft.; cd. sd. 3,280 ft.
Superior Oil Co. No. 1 Gray, sec. 4-11s-12w. 7⅝-in. csg. 3,907 ft.; T.D. 6,939 ft.; abd.
Sutton-Burton No. 1 Calcasieu Natl. Bk., sec. 3-11s-12w. R.U.R.

White Castle—Iberville Parish

T. D. Humphray No. 1 E. B. Adams, sec. 1-11s-12e. S.D. 6,067 ft.; P.B. and sdrkd.; drlg. sh. 7,450 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft.; drlg. sh. 3,460 ft.
Gulf Oil Corp. No. 1 Euclia Broussard, sec. 49-10s-2w. Drlg. sdy. sh. 8,221 ft.
Humble O. & R. Co. No. 1 R. A. Sarver, sec. 35-10s-1e. T.D. 9,526 ft.; rmg.; 9⅝-in. csg. 7,550 ft.; drlg. sh. 9,732 ft.
Magnolia Pet. Co. No. 1 Duson, sec. 14-8s-2w. Drlg. sd. 8,350 ft.
T. S. Markley No. 1 Daigle, sec. 19-7s-2e. Drlg. L. 8,392 ft.

Calcasieu Parish

D. & D. Oil Co. No. 2 Lutcher-Moore, sec. 1-8s-13w. T.D. 8,340 ft.; run 9⅝-in. csg.; drlg. plug; csg collpsd; T.D. 8,579 ft.; 1,747 ft. of 7-in. csg. cmtd. 8,579 ft.; drlg. sdy. L. 9,166 ft.
Republic Prod. Co. No. 1 Sabine Tram. Co., sec. 25-18s-14w. 10¾-in. csg. 1,981 ft.; drlg. sh. 8,892 ft.
Union Sulphur Co. No. 1 J. A. Bel, sec. 10-10s-10w. 10¾-in. csg. 1,216 ft.; T.D. 8,454 ft.; abd.
Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. R.U.

Cameron Parish

Humble O. & R. Co. No. 1 Miami Corp., sec. 8-14s-5w. 20-in. pipe set 188 ft.; T.D. 8,866 ft.; rng. Schlumberger sur.

Cameron Parish—Gulf of Mexico

Superior Oil Prod. Co. et al No. 1 State-Gulf of Mexico, 3,800 ft. W, 6,200 ft. S of SE cor. of irregular sec. 4-15s-8w. 10¾-in. csg. 1,157 ft.; drlg. sd. 6,305 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Elliott, sec. 3-9s-2e. Drlg. sh. 6,596 ft.

Evangeline Parish

Schlicher Prod. Co. No. 1 J. A. Perkins, sec. 35. Top salt 4,924 ft.; drlg. salt 4,924 ft.; S.D.

Iberia Parish

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. Drlg. S.W. sd. 8,950 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 125-12s-11e. T.D. 3,752 ft.; D.S. stuck.

Jefferson Davis Parish

Continental Oil Co. No. 1 Faye, sec. 31-10s-3w. 10¾-in. csg. 1,999 ft.; drlg. sh. and sd. 8,455 ft.
Humble O. & R. Co. No. 1 T. S. Stegall, sec. 20-9s-5w. 13⅜-in. csg. 2,032 ft.; drlg. sh. and sd. 6,138 ft.
Union Sulphur Co. No. 1 Calcasieu National Bank, sec. 12-9s-6w. Core sand with oil odor 8,278 ft.

Lafourche Parish

Amerada Pet. Corp. No. 1 South Coast Corp., sec. 34-15s-19e. T.D. 8,745 ft.; 9⅝-in. csg. 7,636 ft.; drlg. sh. 9,505 ft.
Gulf Oil Corp. No. 3 State P.P., sec. 36-23s-21e. Recvd. 1,000 ft. of oil on 6 min. D.S.T. at 6,749-6,846 ft.; 9⅝-in. csg. 6,832 ft.; drlg. 7,121 ft.; rec. 2,000 ft. P.L.O. on D.S.T. 6,958-70 ft.; T.D. 7,269 ft.; P.B. 6,971 ft.; top salt 7,741 ft.; T.D. 8,728 ft.; salt; using hole for geophysical work.
Wm. Helis No. 2 City of New Orleans, sec. 19-23s-23e. 10¾-in. csg. 2,646 ft.; top salt 7,946 ft.; T.D. 7,959 ft.; S.D.

Plaquemines Parish

Gulf Oil Corp. No. 3 State (Jackson dist.) T.D. 8,144 ft.; rec. 1,500 ft. P.L.O. on

LEGAL

Department of the Interior, United States Land Office, Las Cruces, New Mexico. Notice is hereby given that Lots 3 and 4, NE¼ SW¼ Sec. 31, T. 25 S., R. 37 E., N. M. P. M., New Mexico, containing 119.86 acres in the Jal Field, New Mexico, are offered to the responsible qualified bidder of the highest bonus per acre for lease under section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674) at the royalty rate scale in the lease form shown in Circular 1386 at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at ten o'clock, December 21, 1937. The successful bidder must deposit on the date of the sale à certified check on a solvent bank, or cash, for 1/5 of the amount bid, and file the showing of qualifications to receive a lease, required by section 7 of Circular 1386. The remainder of the bonus bid and the annual rental of $1 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provision of Sec. 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

D.S.T. 8,127-44 ft.; 9⅝-in. csg. 8,144 ft.; drlg. plug to drl. deeper.

St. Bernard Parish

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. 13⅜-in. csg. 303 ft.; T.D. 3,461 ft.; 7-in. csg. 3,461 ft.; drlg. sh. 3,809 ft.
Texas Co. No. 4 State, sec. 14-10s-9e. Drive piling.

St. Martin Parish

Shell Pet. Corp. No. 1 Unit, sec. 11-14s-12e. M.I.

Texas Co. No. 10 St. Martin, sec. 15-8s-7e. Drlg. sh. 8,302 ft.

St. Mary Parish

Shell Pet. Corp. No. 1 Barbour, sec. 21-15s-12e. Drlg. sh. 7,940 ft.
Texas Co. No. 1 State-Bateman Lake, sec. 21-16s-12e. 7⅝-in. csg. 10,515 ft.; T.D. 11,879 ft.; soft formation; P.B. 11,100 ft.; stuck 5¾-in. csg. while running to 10,745 ft.; cutting and pulling csg.

Terrebonne Parish

Barnsdall Oil Co. No. 1 Dilbert, Stark & Brown Sur., sec. 10-16s-15e. T.D. 10,777 ft.; abd.

TEXAS

Week Ending November 20

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 Great Southern, E. D. Robertson Sur. 9⅝-in. csg. 7,145 ft.; T.D. 9,227 ft.; fsg.
Kirby Pet. Co. No. 2 Carrie Baker, J. W. Hall Sur. 10¾-in. csg. 1,400 ft.; T.D. 6,367 ft.; perf. csg. 6,364-66 ft.; flwg. gas.
McCurdy and Johnson No. 1 State, Brazos River. Drlg. Sd.&L. 4,519 ft.; sdtrkd. hole; cg. 6,357 ft.
Shell Pet. Corp. No. 5-A Ramsey, J. W. Hall Sur. Drlg. sh. 1,226 ft.
Shell Pet. Corp. No. 2-B Ramsey, J. W. Hall Sur. T.D. 6,361 ft.; 7-in. csg. 6,361 ft.; P.B. 6,358 ft.; perf. 6,354-57 ft.; I.P. 102 B.P.D., ¼-in. ck.
Shell Pet. Corp. No. 3-B Ramsey, J. W. Hall Sur. No. 10. M.I.M.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 2 Armstrong, Polly & Chance Sur. Drlg. sh. 7,069 ft.
Harrison & Abererombie No. 1 Copeland-Osborne, C. Breen Sur. Cd. sd. 10,257 ft.
Harrison & Abercrombie No. 1 Smith, C. Breen Sur. 9⅝-in. csg. 7,016 ft.; T.D. 10,638 ft.; dropped csg. in hole; cmt. 5-in. inside 7-in. at 10,630 ft.; perf. csg. 10,470-80 ft.; I.P. 275 B.P.D., various cks.; T.P. 3,520 lbs.

Sandy Point—Brazoria County

H. J. DeArman No. 1 Edmundson, D. Talley Sur. T.D. 6,606 ft.; 5½-in. csg. 6,520 ft.; P.B. 6,500 ft.; perf. csg.; 6,505-90 ft. showed S.W.; tstg.

West Columbia—Brazoria County

Texas Co. No. 5 Phillips, George Tennille Sur. Drlg. sh. and L. 4,940 ft.
Texas Co. No. 18 Abrams, George Tennille Sur. R.U.
Texas Co. No. 88 Hogg, George Tennille Sur. T.D. 2,964 ft.; P.B. 2,895 ft.; 7-in. csg. 2,875 ft.; W.O.C.
Texas Co.-Sterling O. & R. Co. No. 4 Phillips, Geo. Tennille Sur. 10-in. csg. 1,195 ft.; T.D. 5,745 ft.; 7-in. csg. 5,645 ft.; I.P. 24 B.P.H., ¼-in. ck.
Texas Co. No. 2 T. L. Smith, Geo. Tennille Sur. T.D. 5,547 ft.; 7-in. csg. 5,433 ft.; I.P. 24 B.P.H., ¼-in. ck.

Calhoun—Heyser—Victoria County

Blanco Oil Co.-Buchanan No. 2 Dunn-Woody, A. Sisneros Sur. T.D. 5,607 ft.; drld. out to 5,601 ft.; I.P. 96 B.P.D., ⅜-in. ck.
Blanco Oil Co.-Buchannan No. 3 C. S. Dunnwoody, A. Sisneros Sur. T.D. 5,605 ft.; 7-in. csg. 5,602 ft.
Geo. H. Echols No. 6 W. H. Bennett, J. E. Galban Sur. T.D. 5,746 ft.; I.P. 4 B.P.H., 3/32-in. ck.
Gulf Oil Corp. No. 1 Bonner, J. E. Galban Sur. Drlg. sh. 4,390 ft.
Gulf Oil Corp. No. 1 T. P. Traylor, J. E. Galban Sur. 7-in. csg. 5,580 ft.; T.D. 6,037 ft.; oil sd.; rec. 100 bbls. of P.L.O. on D.S.T.; tstg.
Humble O. & R. Co. No. 19-B P. H. Welder, A. Sisneros Sur. T.D. 5,490 ft.; I.P. 13 B.P.D. through ⅛-in. ck.
Humble O. & R. Co. No. 4 H. T. Marshall, T.D. 5,484 ft.; perf. csg. 5,463-69 ft.; I.P. 5 B.P.H., 7/64-in. ck.
Humble O. & R. Co.-Plymouth Oil Co. No. 5 Marshall, A. Sisneros Sur. Drlg. sh. 1,080 ft.
Humble O. & R. Co. No. 18-B P. H. Welder, A. Sisneros Sur. R.U.
Magnolia Pet. Co. No. 3 O. M. Lander, J. E. Galban Sur. Loc.
Magnolia Pet. Co. No. 4 Lander, J. Galban Sur. T.D. 6,250 ft.; perf. 5,495-5,500 ft.; flwd. 16½ bbls., 15 hrs.; 7/64-in. ck.
Normandie Oil Co. No. 8 J. G. Cook, A. Sisneros Sur. R.U.
Normandie Oil Co. No. 9 Cook, A. Sisneros Sur. T.D. 5,743 ft.; 7-in. csg. 5,735 ft.
Portilla Drlg. Co. No. 11 C. P. H. Welder, A. Sisneros Sur. T.D. 5,574 ft.; make D.S.T.
Sinclair Prairie Oil Co. No. 2 W. G. Bennett, A. Sisneros Sur. Drlg. sd. 4,770 ft.

Seabreeze—Chambers County

Sun Oil Co. No. 1 Hoffman, T&N.O. Sur. 131. Drlg. sh. 5,312 ft.
Sun Oil Co. No. 2-A Hebert-Broussard, T.&N.O. Sur. 127. Drlg. sh. 4,596 ft.

Hitchcock—Galveston County

N. W. Hunter No. 1 Maco Stewart, J. Spillman Sur. T.D. 5,160 ft.; sd.; rng. csg.

Silsbee—Hardin County

Republic Prod. Co.-Houston Oil Co. No. 1, G. W. Brooks Sur. R.U.
Republic Prod. Co.-Houston Oil Co. No. 24 Brooks, G. W. Brooks Sur. T.D. 6,321 ft.; cutting and pulling drill stem.
Republic Prod. Co.-Houston Oil Co. No. 25 Brooks, G. W. Brooks Sur. T.D. 6,940 ft.; tstg.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1-B Dopslauf, W.C.R.R. Sur. No. 2, Blk. 1. 16-in. csg. 64 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 M. E. Oates, Reels & Trobough Sur. Drlg. sd. and sh. 3,631 ft.

Friendswood—Harris County

Gulf Bd. Oil Co. No. 1 E. B. Ross, G. B. Burnett Sur. Drlg. sh. 3,386 ft.
Humble O. & R. Co. No. 1 G. M. DeGeorge and Green, T. Choate Sur. T.D. 6,080 ft.; I.P. 528 bbls. P.L.O. per day; ¼-in. ck.
Humble O. & R. Co. No. 1 Hicks-Holdale, Perry and Austin Sur. T.D. 6,055 ft.; 5½-in. csg. 6,035 ft.
Humble O. & R. Co. No. 1 Jones & May, Perry and Austin Sur. Drlg. sh. 5,310 ft.
Humble O. & R. Co. No. 1 Kiesling, T. Choate Sur. R.U.
Humble O. & R. Co. No. 1 Gail Whitcomb & Grandstaff, T. Choate Sur. Drk.
National Standard Oil Co. No. 1 Coward, Perry & Austin Sur. Loc.

LaBelle—Jefferson County

Sun Oil Co. No. 1 John Ward, 933 ft. S of No. 2 Broussard, Wm. Burton Sur. 18⅝-in. csg. 109 ft.; 9⅝-in. csg. 8,538 ft.; 7-in. csg. 9,951 ft.; T.D. 10,147 ft.; cmtd. off bttm.; perf. csg. 8,545-90 ft.; failed to flow; pulled tbg.; washing.

Hardin—Liberty County

Jack Frazier No. 2 Lynott & Buffam, J. Robson Sur. R.U.
Jack Frazier No. 1 Buffam-Benning, J. Robeson Sur. R.U.
Gulf Oil Corp. No. 1 V. B. Hinson, H. B. Johnson Sur. R.U.
Halliburton Oil Prod. Co. No. 1 Hanchey, H. B. Johnson Sur. R.U.
Humble O. & R. Co. No. 1 Chambers, A. B. Hardin Sur. Drlg. sh. 2,012 ft.
Jameson-Bryon No. 1 W. B. Hinson, H. B. Johnson Sur. Drlg. sh. 4,590 ft.
Shell Pet. Corp. No. 1 Hanchey, H. B. Johnson Sur. T.D. 7,622 ft.; 5-in. csg. 7,609 ft.; I.P. 593 B.P.D., ¼-in. ck.
Strake Pet. Corp. No. 3 Finley, A. B. Hardin Sur. Sdy. sh. 4,472 ft.
Strake Pet. Corp. No. 2 W. T. Finley, A. B. Hardin Sur. Drlg. sh. 6,783 ft.
Woodley Pet. Co. No. 4 McMurtry, H. B. Johnson Sur. Drlg. sh. 5,980 ft.

South Call—Newton County

Houston Oil Co. No. 2 Sabinetram. 10¾-in. csg. 1,936 ft.; drlg. sh. 5,538 ft.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 Sloan, J. T. Belknap Sur. 10¾-in. csg. 1,200 ft.; drlg. sh. 3,937 ft.
Smith and McDannald No. 1 Gaines, E. Hall Sur. Drlg. sh. 5,739 ft.

Buckeye—Matagorda County

United North & South Development Co. No. 1 G.B.M., Cotton Lge. 7-in. csg. 8,667 ft.; cg. sh. and sd. 10,312 ft.

Palacios—Matagorda County

Atlantic-McCarthy No. 3 Foley Ld. Co., L. Goodwin Sur. Drk.
Glenn McCarthy No. 2 Foley, L. Goodwin Sur. T.D. 8,590 ft.; sdtrk.; T.D. 8,548 ft.; cmtd. 5-in. liner; perf. csg. 8,530-34 ft.; make D.S.T.
Sun Oil Co. No. 1 Bay Shore Farms, Lewis Goodwin Sur. T.D. 11,327 ft.; 7-in. csg. 11,300 ft.

Orange—Orange County

Glenn McCarthy No. 1 Brown, B. Graner Sur. Drlg. 3,410 ft.
Tillery & Ryan No. 1 Chesson, Wm. Dyson Sur. 10¾-in. csg. 1,180 ft.; T.D. 5,946 ft.; 7-in. csg. 5,930 ft.; I.P. 808 B.P.D., ¾-in. ck.; T.P. 950 lbs.
Union Prod. Co. No. 2 Lutcher-Moore, Dyson Sur. R.U.

Segno—Polk County

Gulf Ref. Co. No. 2 Wing, I.&G.N. Sur. No. 15. R.U.
Gulf Oil Corp. No. 8 Wing, sec. 14, I.&G. N. Sur. T.D. 6,765 ft.; 5-in. csg. 6,630 ft.; P.B. 6,627 ft.; perf. csg. 6,261-6,264 ft.; flowed 531 bbls. fluid, 50% oil and S.W.; squeeze off perf.; reperf. csg. 6,231-34 ft.; I.P. 731 B.P.D., ¼-in. ck.; T.P. 1,100 lbs.; C.P. 1,200 lbs.

Spurger—Tyler County

Republic Prod. Co. No. 6 Hurd, N. Hurd Sur. Drlg. sh. 4,237 ft.

Keeran Field—Victoria

Union Oil Co. No. 8 Keeran Est., M. DeLeon Sur. Drlg. 4,300 ft.

McFaddin—Victoria County

Barnsdall Oil Co. No. 1 J. A. McFaddin Est., Foster Lewers Sur. Drlg. sh. 1,880 ft.

Telfener—Victoria County

Gulf Oil Corp. No. 1 Mahon and Buhler, W. C. Carroll Sur. T.D. 6,167 ft.; P.B. and sdtrkd.; drlg. sh. 5,140 ft.

Magnet—Wharton County

Atlantic Refining Co. No. 7-B H. C. Cockburn, Smith and McKenzie Sur. Cg. 5,503 ft.
Atlantic Ref. Co. No. 6-B Cockburn, Smith & McKenzie Sur. T.D. 5,540 ft.; 7-in. csg. 5,537 ft.; perf. csg. 5,524-30 ft.; I.P. 5 B.P.D., ⅛-in. ck.
Humble O. & R. Co. No. 4 Cockburn, S. Castleman Sur. T.D. 5,538 ft.; W.O.C.
Humble O. & R. Co. No. 3 Cockburn, Smith & McKenzie Sur. T.D. 5,540 ft.; 5½-in. csg. 5,535 ft.; I.P. 4 B.P.D., ¼-in. ck,

Pickett Ridge—Wharton County

Texas Crusader Oil Co. No. 3 J. F. Kubella, G. C. Gifford Sur. T.D. 5,010 ft.; abd.
Texas Co. No. 3 Marek, George Reynolds Sur. R.U.

GULF COAST WILDCATS

Brazoria County

Pure Oil Co. No. 1 Smith, S. F. Austin Sur. Loc.
Texas Co. No. 4 Freeport Sulphur Co., C. Arriola Sur. Drk.

Chambers County

Merit Oil Co. No. 1 T. & M. Wright, C. Smith Sur. T.D. 7,515 ft.; 7-in. csg. 6,602 ft.; perf. csg. 6,431-35 ft.; flwd. oil and S.W.; squeezed off perf.

Colorado County

O. C. Garvey No. 1 Buback-Ernest. M. Lapham Sur. Drlg. sh. 2,537 ft.

Fort Bend County

Chapman Minerals Corp. No. 1 Sugarland Industries, Geo. Brown & Belknap Sur. Cd. sh. 6,012 ft.

Grimes County

Hubert Holt No. 1 Greer et al, Patrick B. O'Connor Sur. Drk.

Hardin County

John Mayo No. 1 Hayden, W. K. Griffin Sur. Spd.

Harris County

Amerada-Stanolind O. & G. Co. No. 1 E. M. Wells, A. Larson Sur. R.U.
H. C. Cockburn No. 1 White, Harris & Carpenter Sur. Drlg. sh. 4,279 ft.
H. J. DeArman No. 1 Geiseka, Isaac Bunker Sur. R.U.
Stanolind O. & G. Co. No. 2 Warren Minerals, Walker Wade Sur. Drlg. sh. 4,725 ft.

Jackson County

Cockburn et al No. 1 Hodges, I.&G.N. Sun No. 7. Drlg. sh. 5,910 ft.
Cockburn & Hargrove No. 1 Mike Strauss, A. M. Clare Sur. Abd. 6,520 ft.
Sam G. Harrison et al No. 1 H. A. Meyers, O. York Sur. 10¾-in. csg. 530 ft.; drlg. plug.
Magnolia Pet. Co. No. 1 West Ranch, R. Musquez Sur. R.U.

Jefferson County

Shell Pet. Corp. No. 1 W. P. McFaddin, S. A. Pace Sur. No. 2. Drlg. sh. 5,387 ft.
Lee Bros. No. 1 Wilson, C. L. Nash Sur. Abd. 7,012 ft.
Glenn McCarthy No. 1 J. E. Broussard, C. Hillbrand Sur. R.U.

Liberty County

Humble O. & R. Co. No. 1 E. J. Moore, M. Whittington Sur. Cg. sh. 4,940 ft.

Madison County

Faucett & Kyle No. 1 Bailey, T. Boatwright Sur. T.D. 600 ft.
Faucett & Kyle No. 1 Connor, J. P. Phillips Sur. T.D. 1,630 ft.; 5½-in. csg. 1,535 ft.; abd.
W. H. Lawrence No. 1 Gustavis, J. Woodruff Sur. Drlg. sand 1,356 ft.

Matagorda County

Sun Oil Co. No. 1 Fred Robbins, C. H. Vandeveer Sur. Drlg. sd. 5,457 ft.

Polk County

National Standard Oil Co. No. 1 W. T. Carter, M. S. Womack Sur. Loc.

Trinity County

Gossage-Green & Thompson No. 1 R. E. Thompson, J. A. Hickey Sur. T.D. 1,164 ft.; S.D.
Funk-Walker-Bilnoski No. 1 Trinity State Bank, B. F. Wright Sur. R.U.

Waller County

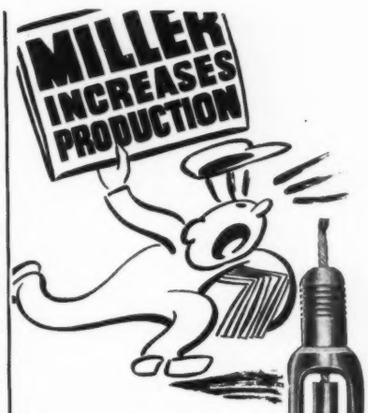
J. Brian Eby No. 1 Wm. Rice Institute, H. Stephens Sur. Drlg. sh. 5,967 ft.
Stanolind O. & G. Co. No. 1 Security Trust Co., H.&T.C. Sur. Drlg. sd. 6,407 ft.

Walker County

W. B. Gossage No. 1 Carey Land & Dev. Co., D. McDonald Sur. S.D. 2,220 ft.

Wharton County

Strake Pet. Co. No. 1 Strunck, L. P. Jennings Sur. R.U.
Texas Co. No. 1 Johnson, John Bognad Sur. R.U.



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- **SAND BOTTOM** — Used when tools are run and when well is shot to quickly remove loose material.
- **STAR BOTTOM** — Used for cutting the sand loose.
- **CHISEL BOTTOM** (In Pump) — With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

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FOR SALE BY SUPPLY STORES EVERYWHERE

S. W. TEXAS WILDCATS

Atascosa County

L. W. Steiren No. 1 Crawford, 4 mi. W of Anchorage. T.D. 3,490 ft.; top chalk 3,397 ft.; carrying odor of oil and gas, but little sat.; rng. 1,017 ft. of liner.

Bastrop County

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur. Drlg. Taylor 2,200 ft.

Hantho-Nelson, Inc., No. 2 Litton, Cedar Creek Community. T.D. 1,935 ft.; rng. csg.

Sunrise Oil Co. No. 1 Smith, E. Standifer Sur. O.W.W.O.; old T.D. 2,486 ft.; S.D.

Bell County

W. H. Vernor No. 1 McQueen, 9 mi. S of Belton. S.D. 2,160 ft.

Caldwell County

Fain Gillock No. 1 Kelly, Berry Sur. Acd.; swbd. wtr. and oil; 5½-in. at 1,457 ft.; T.D. 1,706 ft.; swbd. dry; S.D.

Heard & Heard No. 1 Brown, McCarley Sur. Abd. 2,685 ft.

McNeill Pet. Co. No. 1 Moreno, Allen Sur. T.D. 1,752 ft.; flwg. est. 25 bbls. oil per day.

Comal County

L. H. Wilson No. 1 Alexander, D. Benton Sur. Skdg. on.

DeWitt County

Ike Howeth No. 1 Gips, Moore Sur. Drlg. sh. 4,056 ft.

Dimmitt County

Teas & Maryland Corp. No. 1 McKnight, Blk. 13, sec. 23. Drlg. sh. 4,512 ft.

Duval County

T. R. Andrews No. 1 Hazelwood, Hopkins Sur. R.U.

J. L. Collins & Co. No. 1 E. H. Hagist B.S.&F. Sur. Drlg. sh. 1,330 ft.

James Hougen No. 1 Patton, Sur. 148. Drlg. sh. 3,900 ft.

Magnolia Pet. Co. No. 1 D.C.R.C., Sur. 261. Drlg. sdy. sh. 3,559 ft.

Magnolia Pet. Co. No. 1 Ruiz, Sur. 190 T.D. 5,551 ft.; abd.

Penn-Palangana Oil Co. No. 2 Schallert, Sur. 239. Cg. sh. 2,910 ft.

Slaughter & Hugle No. 1 Hunter Est., sec. 515. T.D. 4,732 ft.; P.B. 3,352 ft.; tstd. S.W. 3,300-15 ft.; abd.

Edwards County

Amon G. Carter No. 1 Sweeten, SE¼, Blk. 2, Sur. 49. T.D. 5,090 ft.; P.B. to sdtrk.; fsg.

Dan Auld No. 1 Henderson, sec. 46, Blk. E. Drlg. sh. 1,535 ft.

C. V. Lyman No. 1 Brown, Blk. 3. Spdg.

Frio County

Pagenkopf & Jamieson No. 1 Houston Est., 2,254-ac. tr., J. Figuerroa Sur. S.O. 2,610-03 ft.; set csg. to test 7-in. at 2,490 ft.; swbg.; S.O.&G. and wash wtr.; T.D. 2,651 ft.; set csg.; P.B. 2,607 ft.; pmpd. 130 bbls. fluid per day, 90 per cent sulfur wtr.; tstg.

Goliad County

Goliad Oil Corp. No. 1-A Cole, Lot 33, Goliad town tr. T.D. 5,687 ft.; P.B. 5,609 ft.; no show.

Rual Swiger No. 1-B Wood, J. Shearn Sur. Drlg. sh. 4,510 ft.

Guadalupe County

Mehu Oil Corp. No. 1 Schulze, Chenault Sur. S.D. 1,705 ft.

Riddle Oil Co. No. 1 C. A. Krueger, James M. Thompson Sur. 10-in. csg. 20 ft.; T.D. 670 ft.; run 7-in. csg. to protect hole.

Wellington Oil Co. No. 1 Koepp, W. H. Smith Sur. Set csg.; sat. ch. 1,572 ft.; treated with 1,000 bbls. of acid; tstd. 2 bbls. of oil, 175 bbls. of sulfur wtr.; drlg. 1,607 ft.

Hidalgo County

Atlantic Ref. Co. No. 1 American Rio Grande. 7-in. csg. 8,505 ft.

Y. & B. Oil Co. No. 1 Waite, Tr. 382, Los Jidos Gr. T.D. 5,558 ft.; move in heavy rig.

Jim Wells County

H. M. Hill et al No. 1 Kuether, Lots 70 and 75, sec. 52, Haldeman Subd. Drlg. sh. 1,578 ft.

Howell et al No. 1 Talbot, 181-ac. tr., Lavaca Gr. T.D. 6,012 ft.; P.B. 5,179 ft.; perf. csg. 5,140-42, 5,078-5,100, 4,895-4,900 ft.; ran tbg. and swbd. wash wtr.; slight show of oil and S.W.; swbg.

Magnolia Pet. Co. No. 7 Seeligson, 10,433-ac. tr., Los Jaboncillos Gr. T.D. 8,162 ft.; P.B. 6,770 ft.; perf. csg. 6,713-23 ft.

H. J. Porter No. 1 Charles E. Walcott, Zenobia Cuellar Sur. 10¾-in. csg. 228 ft.; 10-in. csg. 516 ft.

Yukon Oil Co. No. 1 Shaeffer, Zenobia Cuellar Sur., sec. 11. 10¾-in. 228 ft.

Karnes County

Ivan Howard No. 1 Moczygemba, Erasmo Seguin 5, League Gr. Top sd S.O. 2,-159 ft.; oil sd. 2,174-78 ft.; set csg. 2,187 ft.; core sd. 2,400 ft.

Kenedy County

La Sal Vieja Oil Corp. No. 1 Garcia Ld. & Cattle Co., Blk. 95, Tr. 73. Drlg. sh. 6,103 ft.

Kleberg County

Cinco Oil Co. No. 1 Killam, Lot 8, Blk. 53, Kleberg Town & Imp. Co. Subd. R.U.

Magnolia Pet. Co. No. 1 Dietz, Gabriel Trevino Sur. Drlg.

Superior Oil Co. No. 1 Koch, sec. 32, Blk. 26. Set surf. csg.; drlg. 3,937 ft.

LaSalle County

Ralph B. Reed No. 1 Yeager, Blk. 7, Sec. 8, Wallace Subd., Yeager ranch. Drlg. sh. 575 ft.

Lee County

Jas. E. Pederson No. 1 Turner, David Hudson Sur. S.O.&G. 6,140-80 ft.; sdtrkd. at 4,600 ft. and drld. to 6,132 ft.; S.O.&G.; set csg. 6,021 ft.; acdzg. with 20-bbl. load; when opened well flwd. 20-bbl. head and went dead; swbd. oil and Wtr.; acd.; R.U. to pump.

Live Oak County

James Chew No. 1 Alma McNeil, Alexander Parks Sur. M.I.M.

L. Franklin No. 1 Odem, R. Everitt Sur. Drlg. sh. 1,837 ft.

C. G. Grimes et al No. 1 W. A. Friedle, Refugio Co. Sch. Ld. Sur. Loc.

Ranco Oil Corp. No. 1 Cook Ranch sec. 3, J. Poltevent Sur. Spd.; cmtd. surf. pipe.

V. G. Schimmel No. 1 West, sec. 59, Haas Sur. R.U.

McMullen County

Adams & LeFevre No. 2 Selman, sec. 58. Abd. 2,957 ft.

Coyle & Bedwell No. 1 Two Rivers Rnch. Co., sec. 60. S.D. 10 ft.

Gilcrease Oil Co. No. 1 A. C. Meters, Charles Stevens Sur. S.D. 1,300 ft.

Medina County

M. L. Walker No. 1 Riff, Hans Sur. No. 43. Drlg. sh. 895 ft.

Milam County

Kingdor Expln. Co. No. 1 Stidham. T.D. 3,818 ft.; P.B. 3,765 ft.; swbd. sulfur wtr.

Nueces County

Culton & Meador No. 1 Bailey Est., Blk. 65, J. Elliff Subd., Joaquin Lopez de Herrera Sur. Cg. 5,570 ft.

L. A. Douglas No. 1 Charles McKenzie, Sur. 419. R.U.

Mills Bennett Prod. Co. No. 1 Johnson, sec. 125, Pauls Subd. T.D. 5,689 ft.; P.B. 5,111 ft.; swbd. oil and S.W.; swbg.

Richardson Pet. Co. No. 1 Cunningham, sec. 77. T.D. 5,306 ft.; 7-in. csg. 5,306 ft.

Sannix Oil Co. No. 1 Nesloney, 760-ac. tr., Casa Blanca Gr. Drlg. sh. 4,950 ft.

Southern Minerals Corp. No. 2 King, Blk. 6, R. King Farm Lots. D.S.T. 4,020-33 ft.; rec. 640 ft. oil, 850 ft. S.W. in 20 min. at 35 lbs. W.P.; T.D. 6,219 ft.; P.B. to 4,030 ft.; perf. 4,017-20 ft.; jetting 320 bbls. of fluid per day, 75 per cent S.W., 25 per cent oil; pressure 150-200 lbs.

Union Prod. Co. No. 1 Simmons, 1,000-ac. tr., Agua Dulce Gr. Drlg. sh. 5,426 ft.

Refugio County

Hogan Oil Co. No. 1 Kelley, M. & A. Roache Sur. Core sdy. sh. 5,772 ft.

San Patricio County

Argo Oil Corp. No. 1 Soehnge, 159.66-ac. tr., Blk. 11, Schleicher & Joseph Subd., Delgado Gr. T.D. 4,962 ft.; top sd. 4,957 ft.; well tried to blow out; killed to deepen; T.D. 6,310 ft.; set 7-in. protective csg. 6,200 ft.; drlg. plug.

Rutherford O. Corp. No. 1 George, Lot 12, Geo. Paul Subd. Drlg. sh. 1,530 ft.

Starr County

Calderoni-James-Follette No. 1 Rodriguez, Blk. 6, Sh. 56, Porc. 80. Set 4½-in. csg. 1,483 ft.; T.D. 1,511 ft.; P.B. T.D. 1,75o ft.; S.D.; swbd. S.W.

Collins No. 1 Guerra, Sh. 6, San Jose Gr. Drlg. 5,440 ft.

Dodd Tr. No. 1 Wardner, Vela Sur., Porc. 84. S.D. 1,265 ft.

Sioux Oil Co. No. 6 Ricaby, Porc. 83. Drlg. 1,767 ft.; S.D.

Sun Oil Co. No. 1-F Guerra, Salvador Garcia heirs Sur., Porc. 109. Core 3,057 ft.

Transwestern Oil Co. and Davenport No. 3 Slick, sec. 527. T.D. 6,862 ft.; rec. all but 75 ft. pipe; drlg. by csg.

Travis County

W. O. Caffey No. 1 Bremond, 104.5-ac. tr., Santiago del Valle Sur. S.D. 510 ft.

D. E. Hamer No. 1 Benson, Wilson Sur. S.D. 400 ft.

LaShell, Gardner & Wilson No. 1 Wilson, Blk. 1. Core 750 ft.

J. E. Mills No. 1 Washington, Navarro Sur. S.D. 1,196 ft.

Victoria County

W. V. Bowles No. 1 Robertson, T. C. Burnham Sur. Drlg. sh. 5,810 ft.

Stanolind O. & G. Co. No. 1 Henderson & Pickering. T.D. 7,468 ft.; fsg.

Webb County

Bridwell Oil Co. No. 1 Billings, Sur. 36. M.I.M.

Lemp Oil Co. No. 1 Clark, 500-ac. tr., Porc. 33. Drlg. sh. 767 ft.

Lewis et al No. 1 Garza, Sur. 48. T.D. 2,215 ft.; S.D.

Mills Bennett Prod. Co. No. 1 Gates, Blk. 28, Sur. 200. Drlg. sh. 2,512 ft.

G. G. Mortimer No. 1 R. E. Weihausen, C.C.S.D.&R.G.N.G. Sur. No. 27. M.I.M.

Willacy County

Magnolia Pet. Co. No. 1 Armendiaz, Sh. 4, San Juan de Carricitos Sur. Core sh. 6,926 ft.

Wilson County

Arnold, Dink, Stone & Haley No. 1 Black, 1,102.3-ac. tr., hrs. of Juan and Simon Arocha Sur. S.D. 825 ft.

W. D. Parkinson No. 1 Burney, Arocha Sur. T.D. 700 ft.; abd.

Zapata County

Covle-Calloway No. 1 Flores, Porc. 37. Core 2,450 ft.

S. W. TEXAS PROVEN

Lamar—Aransas County

Barnsdall Oil Co. No. 1 Kate Edwards, Lot 87, Lamar Townsite. Old T.D. 7,-996 ft.; cmtd. D.S. stuck in hole and shot 7,495-7,501 ft.; washed; no show; shut in; prep. to bail.

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 9-C McCampbell, Lot 2, Blk. 41. T.D. 7,130 ft.; 7-in. csg. 7,130 ft.

Atlantic Ref. Co. No. 1-D Murray, Lot 3, Blk. 37. 7-in. csg. 7,287 ft.; perf. 7,109-12 ft.

Atlantic Ref. Co. No. 2-A Porterfield, Lot 8, Blk. 14. Cg. 7,190 ft.

Atlantic Ref. Co. No. 5-B Porterfield, Blk. 1. T.D. 7,210 ft.; set csg.; perf. 7,173-77 ft.; comp.; no gauge.

Atlantic Ref. Co. No. 6-B Porterfield, Lot 6, Blk. 10, McCampbell Subd. Core 7,230 ft.

Atlantic Ref. Co. No. 1-C Porterfield, Lot 8, Blk. 12. T.D. 8,889 ft.; pulling D.S.

Atlantic Ref. Co. No. 2-D Porterfield, Blk. 37. T.D. 7,232 ft.; 7-in. csg. 7,200 ft.

Franston Oil Co. No. 1 Murray, Lot 7, Blk. 37. Perf. 7,109-13 ft.; T.D. 7,247 ft.

Graham Oil Co. No. 2 Edwards, Lot 16, Blk. 7. Cg. 7,109 ft.

Graham & Buckingham Oil Co. No. 3 Porterfield, Blk. 9. Lot 8, O. and G. sd. 6,539-60 ft.; gas sd. 6,757-75 ft.; T.D. 7,140 ft.; set csg.; tstg.

Norman Bertleson No. 2-A Murray, Lot 5, Blk. 37. T.D. 7,127 ft.; set 7-in. csg.; W.O.C.

Benavides—Duval County

Arkansas Fuel Oil Co. No. 8 Rossi, Flores Gr. No. 25. Ran tbg.; set 7-in. csg. 4,753 ft.; I.P. 90 bbls. in 2 hrs., ¼-in. ck.

Blanchard No. 1 Puig, Blk. 59, Sur. 238. O.W.W.O.; T.D. 5,425 ft.; P.B. 5,409 ft.; reperf. 5,394-98 ft.; I.P. 110 B.P.D., 10 per cent S.W.

Bridwell Oil Co. No. 6 Anciro, Santos Flores Gr. No. 25. T.D. 4,728 ft.; 7-in. csg. 4,712 ft.

Burton Drlg. Co. No. 1 Southland Life, Blk. 12, Sweden Farm Lots. T.D. 4,833 ft.; perf. 4,815-20 ft.; I.P. 30 bbls. dist. per day.

Glasscock Drlg. Co. No. 2 Farias, Santos Flores Gr. No. 25. R.U.

Frank Gravis Oil Co. No. 1 Valleo San Andres Gr. Set csg. 516 ft.; core sdy. sh. 4,237 ft.

Gravis & Doran No. 7 Puig, San Andres Gr., sec. 24. R.U.

Navarro Oil Co. No. 4 Owens, Santos Flores Gr. No. 25. T.D. 4,771 ft.; 7-in. csg. 4,765 ft.; tstg.

Reynosa Oil Co. No. 7 Wilson, sec. 9, Sweden Farm Lots. Set 7-in. csg. 4,773 ft.; T.D. 4,783 ft.; I.P. 8 B.P.H., ¼-in. ck.

Russ Pet. Co. No. 10 Farias, sec. 9, Sweden Farm Lots. T.D. 4,819 ft.; I.P. 96 bbls. in 12 hrs.

Standard Oil Co. of Kans. No. 5 Parr, 80-ac. tr., San Andres Gr. T.D. 4,768 ft.; I.P. 232 B.P.D.

Standard Oil Co. of Kans. No. 6 Rossi, Santos Flores Gr. T.D. 4,795 ft.; I.P. 213 B.P.D., ½-in. ck.

Woodley Pet. Co. No. 1 West, Sweden Farm Lot No. 10. Sd. 5,354-64 ft.; T.D. 5,378 ft.; set csg. 5,359½ ft.; I.P. 156 B.P.D.

Seven Sisters—Duval County

Rudco O. & G. Co. No. 1 Ellis, Sur. 308. Drlg. sh. 2,039 ft.

Thomas-Lockhart—Duval County

Lockhart Bros. No. 1 Rogers, Sur. 277. Drlg. sh. 4,712 ft.

LaBlanca—Hidalgo County

Gulf States Oil Co. No. 2-A Delta Orchards, Lot 3, Sur. 94. Drlg. sh. 6,135 ft.

Chittim—Maverick County

Texas Gas Service Co. No. 6 Chittim, O.W.W.O.; O.T.D. 5,592 ft.; sdtrk. 5,400 ft.; milling on junk 5,434 ft.

Agua Dulce—Nueces County

Texon Roy. Co. No. 3 Driscoll-Sevier, Chapman Part., Palo Alto Gr. Drlg. sh. 5,412 ft.

Union Prod. Co. No. 1 Galliday, Agua Dulce Gardens Subd., Benton Pastures. T.D. 4,042 ft.; fsg.

Luby—Nueces County

Seaboard Oil Corp. No. 2 Shaeffer, Sh. 3, Blk. 2, Luby Subd. T.D. 6,059 ft.; 7-in. csg. 5,049 ft.

Stanolind O. & G. Co. No. 4 McCann, Falcon Sur. 7-in. csg. 5,043 ft.

LaSal Vieja—Willacy County

Shell Pet. Corp. No. 2 Yturria, Sh. 64, Carricitos Gr. Drlg. 8,009 ft.

Batesville—Zavalla County

Wilcox O. & G. Co. No. 2 Gillam, G.W.T. &P.R.R. Sur. S.D. 2,590 ft.

EAST TEXAS

(Border Counties)

Cass County

Ark. La. Gas Co. No. 1 Neilon, Thomas Gillespie Sur. 7-in. 5,954 ft.; comp. 135 bbls. 6 hrs.; T.D. 5,996 ft.

Bay Oil Corp. No. 4 Cobb, G. Crowder Sur. Cg. 5,945 ft.

W. C. Feazel No. 1 Parker, G. Crowder Sur. Drlg. 5,583 ft.

Union Prod. Co. No. 5 fee 575, B. Holmes Sur. Cg. 5,913 ft.

Union Prod. Co. No. 4 J. S. Hall, J. N. Jackson Sur. Rmg.; T.D. 6,087 ft.

Union Prod. Co. No. 2 Thrower. Comp. 10 B.P.H.; T.D. 5,933 ft.

Union Prod. Co. No. 3-A Starke, D. Gilliam Sur. Cg. 5,860 ft.

Marion County—Rodessa

Arkansas-La. Gas Co. No. 1 Neilson, A. D. S. Coy Sur. Comp. 135 bbls. 6 hrs.; T.D. 5,996 ft.

Geo. Barham No. 1 Whitfield, R. Bennington Sur. Comp. 21 bbls. hrly.; T.D. 6,090 ft.

Fohs Oil Co. No. 3 Mary McReynolds, A. D. S. Coy Sur. 7-in. cmt. 6,133 ft.; comp. 215 bbls. dly.; T.D. 6,149 ft.

Fohs Oil Co. No. 1 W. T. Neilon, SE cor. 70-ac. Neilon Sur. 7-in. 6,074 ft.; T.D. 6,090 ft.

Fohs Oil Co. No. 2 M. Reynolds, A. D. S. Coy Sur. Comp. est. 6,000,000 ft. gas; T.D. 6,014 ft.

Heyser-Heard & Clardy No. 1 L. Henderson, R. Bennington Sur. 7-in. 6,000 ft.; T.D. 6,030 ft.

Holcomb & Thomasson No. 1-B L. Henderson, U. Ewing Sur. Drlg. 5,617 ft.

Mid-Continent Pet. Corp. No. 4 Sory, A. D. S. Coy Sur. Tstd. 6,000,000 ft. gas; spray oil; tstg.; T.D. 6,082 ft.

Shell Pet. Corp. No. 1 Cooke, R. Bennington Sur., 80-ac. tr. Drlg. 4,397 ft.

Shell Pet. Corp. No. 1 L. Henderson Unit, R. Bennington Sur. Drlg. 4,865 ft.

Union Prod. Co. No. 5 Hutchinson, A. D. S. Coy Sur. Comp. 16 bbls. hrly.; T.D. 6,092 ft.

Union Prod. Co. No. 3-A Starke, D. Gilliam Sur. R.U.

Panola County

Danciger O. & G. Co. No. 1 Tatum, A. Bissell Sur. T.D. 6,514 ft.; perf. csg. 5,253-49 ft.; tstd. S.W.; T.D. 6,514 ft.

Magnolia Pet. Co. No. 2 E. A. Hull, Thos. Applewhite Sur. T.D. 8,717 ft.; fsg. for D.P.

WEST TEXAS WILDCATS

Andrews County

M. S. Forgeron et al No. 1 Lockhart & Brown, C NE¼ sec. 20, Blk. A-41, P.S.L. Sur. S.D. 179 ft.

Gulf Oil Corp. No. 1 State, sec. 8, Blk. 14. Drlg. 4,122 ft.

Honolulu Oil Co. No. 1-6 Parker, sec. 6, Blk. A-66, P.S.L. Sur. Loc.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. Drlg. 3,150 ft.

Borden County

Continental Oil Co. No. 1-A Clayton, sec. 27, Blk. 32, Twp. 4n, T.&P. Sur. Drlg. 1,180 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. Drlg. 6,034 ft.

Storey No. 1 Wilson, sec. 3, Blk. 212, T.& St.L. Sur. S.D. 2,545 ft.

Cochran County

P. N. Wiggins et al No. 1 Dean, NE cor. League 58, Martin Co. School Lands. C.O. 5,020 ft.; acidizing.

Pete Wiggins et al No. 1 C. Slaughter Dean, C Lab. 26, League 92, Lipscomb Co. Sch. Ld. S.D.; W.O. 5,085 ft.

Concho County

Sam Murray No. 1 R. G. Armor, sec. 105, T.&N.O. Sur. Spudded and S.D.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39, Blk. W, T.&P. Sur. S.D. 1,005 ft.

H. E. Ogden et al No. 1 Rawlins, sec. 390, Blk. B-21. T.D. 525 ft.; prep. to D.D.

Crane County

Wilcox O. & G. Co. No. 1 McKnight, sec. 9, Blk. 46, Twp. 3s, G.M.M.B.&A. Sur. T.D. 6,177 ft.; pipe stuck; fsg.

Crockett County

Moore Bros. No. 1 Perner, sec. 37, Blk. 2, I.&G.N. Sur. T.D. 7,439 ft.; S.D.

Stewart & Cormas No. 1 Hoover, sec. 1, Blk. FF, B.B. Sur. T.D. 1,750 ft.; S.D.; fsg.

Culberson County

Grisham & Hunter No. 1 fee, sec. 14, Blk. 42, P.S.L. Sur. M.I.S.T.

C. A. Jarrell et al No. 1 C. M. Caldwell, C of SW¼ sec. 15, Blk. 100, P.S.L. Sur. S.D. 507 ft.: H.F.O.

Dawson County

R. Albaugh No. 1 D. Hogg, SE of SE sec. 17, Blk. 34, Twp. 4n, T.&P. Sur. S.D. 3,865 ft.

Dickens County

C. E. Litchfield No. 1 Harris, sec. 354, Blk. 1, H.&G.N. Sur. S.D. 1,602 ft.

J. F. Morrisey et al No. 1 C. L. Bird, sec. 290, Blk. 1, H.&G.N. Sur. Drlg. 1,795 ft.

Edwards County

A. P. Carter No. 1 F. D. Sweeten, S&E sec. 48, Blk. 2, B&B Sur., 1½ mi. E of Rock Spgs. T.D. 5,112 ft.; prep. D.D.

Fisher County

I. J. Allen No. 1 H. S. Newman, Lot 49, Bastrop Co. Sch. Lds. Drlg. 3,200 ft.

Bond Oil Corp. No. 1 N. Bertram, 1 mi. S of Sylvester. Drlg. 2,375 ft.

Consolidated Oil Co. et al No. 1 Florida. Drlg. 3,410 ft.

General Crude Oil Co. No. 1 Morrow, sec. 185, Blk. 2, H.&T.C. Sur. T.D. 3,496 ft.; W.O.C.S.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. T.D. 574 ft.; W.O.C.S.

Gaines County

Continental Oil Co. No. 2 Jones, sec. 1, Blk. A-8, P.S.L. Sur. T.D. 4,680 ft.; R. U.S.T.

Mitchell & Sullivan No. 1 Shell, T. S. Riley, sec. 447, Blk. G, C.C.S.D.&R.G. N.G. Sur. Drig. 2,146 ft.

Shell Pet. Corp. No. 1 Robertson, sec. 344, Blk. G. T.D. 4,800 ft.; W.O.C.S.

Garza County

M. L. Richards No. 1 Slaughter. Drlg. 1,930 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. Loc.

Hockley County

The Texas Co. No. 2 Slaughter, Labour 92, League 37, Zavalla Co. Sch. Lds. Drlg. 4,214 ft.

Howard County

W. F. McDermott et al No. 1 Lucas, sec. 18, Blk. 29, Twp. 1n, T.&P. Sur., 5 mi. N of Dodge pool. Drlg. 2,228 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6 U.R. 3,241 ft.

Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Drlg. 1,570 ft.

Jeff Davis County

H. D. Wilcox et al No. 1 Jones-Coffield. Drlg. 3,353 ft.

Loving County

Barnett Pet. Co. No. 1-A Johnson, sec. 2, Blk. 57, Twp. 1, T.&P. Sur. T.D. 3,525 ft.; prep. rg. csg.

Carpenter & Grierson No. 1 Mrs. Bennie Barnes, sec. 22, Blk. C-25, P.S.L. Sur. Loc.

Martin County

J. L. Green et al No. 1 O. B. Holt, C of Labour 20, Lge. 319, Garza Co. Sch. Lds. Drlg. 4,135 ft.

Harris-Anderson Oil Corp. No. 1 Mollie Robinson, sec. 33, Blk. 38, T.&P. Sur. Loc.

Menard County

G. A. Clements No. 1 Murchison, sec. 80, B.S.&S. Sur., 8 mi. E of Menard. M.I.M.

Nolan County

Marland-Drake Drlg. Co. No. 1 J. H. Withers, sec. 65, Blk. 21, T.&P. Sur. Loc.

Pecos County

Ed Falney No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. Loc.

Humble O. & R. Co. No. 1 Belding et al, 9 mi. SW of Ft. Stockton. Rg. 2.582 ft.

Humble O. & R. Co. No. 1 Butz, sec. 104, Blk. OW. Drlg. 190 ft.

Humble O. & R. Co. No. 1 Pryor, sec. 100, Blk. OW. Drlg. 135 ft.

Messenger & Osborn No. 1 Humble-Young, sec. 49, Blk. 10, H.&G.N. Sur. T.D. 1,807 ft.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 6,237 ft.

Thompson & Minshall No. 1 Michaelson, 660 ft. N and W, sec. 24, Blk. 146, T.& St.L. Sur. U.R. 735 ft.

Wilcox O. & G. Co. No. 1 Serf, sec. 27, Blk. 130, T.&St.L. Sur. Drlg. wtr. well.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Drlg. 3,888 ft.

Reeves County

Barnett Pet. Corp. No. 1 Ely, sec. 38, Blk. 71, P.S.L. Sur., 12 mi. NW of Toyah. Drlg. 1,775 ft.

Runnels County

Homer Price No. 1 Beddo, sec. 51, Thompson Casey Sur. Drlg. 2,350 ft.

K Z Oil Co. No. 1 B. Fletcher, E. C. Good Sur. S.D. 4,391 ft.; stdz.

Stephenson & Glober No. 1 Fowler, sec. 150, E.T.R.R. Sur., 2 mi. NW of Ballinger. T.D. 1,095 ft.; S.D.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. T.D. 4,710 ft.; drlg. by csg.

Tex-Tor Oil Corp. No. 1 Judkins & Spencer, C of SW¼ sec. 33, Blk. A, A.&B. Sur. Drlg. 4,420 ft.

Scurry County

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.T.&C. Sur. S.D. 3,062 ft.

T. G. Shaw Oil Co. No. 1 First Natl. Bank. 8-in. cmtd. 2,420 ft.; W.O.C.S.

Sterling County

Wilcox O. & G. Co. No. 1 Kinnebrew Est., sec. 101, Blk. 2, H.&T.C. Sur. Drlg. 3,697 ft.

Sutton County

Ordovician Oil Co. No. 1 Evans, sec. 1, L. Stubblefield Sur., 32 mi. SE of Sonora. S.D. 3,475 ft.

Terrell County

D. & S. Oil Co. No. 1 Sam Bell. S.D. 345 ft

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Wardlaw, sec. 5, Blk. 17, H.&T.C. Sur. Drlg. 1,821 ft.

Upton County

Rutter et al No. 1 Egolb, sec. 5, J. H. Gibson Sur. Drlg. 2,305 ft.

Ward County

Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. R.U.M.

L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. Top Del. L. 4,635 ft.; top Del. sd. 4,670 ft.; T.D. 4,710 ft., ran tbg.

Winkler County

Stogner & Pipkin No. 1 Blade, sec. 103, Blk. D, J. H. Gibson Sur. Loc.

Yoakum County

American Liberty Oil Co. No. 1 A. C. Thomas, 2,227 ft. S and 440 ft. W, sec. 864, Blk. D. Drlg. 4,330 ft.

American Liberty Oil Co. No. 1 Claywater, T.D. 5,083 ft; comp. flw. 225 bbls. per day.

J. W. Murchison et al No. 1 Sawyer, SE¼, sec. 702, Blk. D. R.U.R.

Denver Prod. & Ref. Co. No. 1-A Whittenburg, sec. 830, Blk. 4. Drlg. 5,038 ft.

J. L. Greene et al No. 1 Nevels, sec. 709, Blk. D. T.D. 5,501 ft.; D.&A.

Skelly and Sun Oil Co. No. 1 Kiser, sec. 640, Blk. D. Drlg. 5,044 ft.

Standard of Texas No. 1 M. B. Sawyer, sec. 576, Blk. D, J. H. Gibson Sur. Drlg. 5,403 ft.

Texas Co. No. 1 Walker, sec. 794, Blk. D, El. 3,656 ft.; T.D. 5,180 ft.; P.B. to 5,162 ft.; shot; acid.; swbg. oil and wtr.; P.B. 5,162 ft.; tstg.

P. N. Wiggins et al No. 1 Bartlett, sec. 359, Blk. D. Drlg. 4,937 ft.

E. C. TEXAS WILDCATS

Anderson County

Humble O. & R. Co. No. 1-C Southern Pine Lbr. Co. Cg. 7,932 ft.

H. L. Parsons No. 1 H. B. Hemby, 7 mi. NE of Navarro. R.U.

Angelina County

J. C. Bonham No. 1 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. R.U.

C. E. Parrott No. 1 J. C. Burres, W. Plucker Sur., 2½ mi. W of Huntington. Loc.

Bowie County

King Oil Corp. No. 1 W. W. Ames, 800 ft. S and 1,650 ft. E of J. A. Tolbott Sur., 4½ mi. NW of Texarkana. Drk.

Cherokee County

J. G. Mayo No. 1 Holmes, 330 ft. most northerly NE cor. of 108 acres, S. F. L. Noble Sur. S.D. 4,157 ft.; wtr. sd.

Merica Oil Co. No. 1 Cherokee Dev. Co., A. J. Acker Sur., 2 mi. E of Maydelle. Drk.

E. H. Moore, Inc., No. 1 Chronister Lbr. Co., 6 mi. N and E of Wells, Tr. 71, Blk. 33, John Durst Gr. D.&A.; T.D. 5,925 ft.

Falls County

McCleod et al No. 1 F. Bolton, J. R. Cockrill Sur., 4 mi. NW Rosebud. Fsg. 1,708 ft.

Freestone County

C. E. Rossiter No. 1 J. P. Fulton in J. P. Fulton Sur., 2½ mi. E of Donie. S.D. 956 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2¼ mi. SW of Longview Trinity test. El. 272 ft.; drlg. 7,359 ft.; hd. sdy. L.

Henderson County

Tide Water Assoc. et al No. 2-C McElreath & Suggett, W. P. Wyche Sur. T.D. 9,320 ft.; P.B. to 9,255 ft.; est. 15,000,000 ft. gas; D.S.T. 8,810-9,260 ft.; ⅝-in. tbg. ck. 40 min.; 510 ft. drlg. pipe; 13 stands mud and started blowing gas; B.H.P. 4,700 lbs.; P.B. from 9,260 to 8,890 ft.; packer at 8,760 ft.; perf. csg. 8,759-8,890 ft.; 60 shots; D.S.T.; ⅝-in. ck. 10 min.; 300,000 ft. gas.

Hill County

I. Willis No. 1 W. P. Ball, S. Marshall Sur., 3 mi. NW of Covington. M.I.M.

Hopkins County

Abbott & Ruthland No. 1 Peyton, J. Burkham Sur., 2½ mi. N of Sulphur Bluff. Drlg. 3,375 ft.

Leon County

Kelly & Fox No. 1 Bryant, A. M. Coultern Sur., 1 mi. E of Marquez. R.U. and S.D.

Limestone County

C. L. Brown No. 27 N. B. Boyd, R. B Longhotham Sur., 3 mi. S of Wortham T.D. 1,402 ft.; oil sd.; rng. csg.

Pure Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. T.D. 8,847 ft.; D.S. stuck.

Stanolind O. & G. Co. No. 1 T. Norris, in Thresher Sur., 5 mi. N of Kosse; 6,500-ft. test; elev. 528 ft.; drlg. 6,474 ft.

Navarro County

Nowlin et al No. 1 Easterling, J. Mayor Sur., 2 mi. S of Chatfield. Drlg. 2,576 ft.

Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana. Drlg. 1,570 ft.

T. Sharpe et al No. 1 E. B. McDowell, T Jordan Sur., 1½ mi. S of Bassets. Fsg. 2,970 ft.

Rusk County

J. W. Shipman et al No. 1 Citizens Bank, J. J. Y'Barbo Sur., 4 mi. NE of Henderson. S.D. 4,500 ft.

Trinity County

Billnoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. Drk.

Upshur County

L. & G. Oil Co. No. 1 H. Williams, Roeder Sur. 2 mi. NW of Gracetown. R.U.

J. K. Wadley No. 1 W. R. Thornton, P. Mauldery Sur., 3 mi. SW of Gracetown. T.D. 3,870 ft.; D.&A.

NORTH TEXAS WILDCATS

Archer County

D. S. Johnson No. 1 L. G. Williams, T. Toby Sur. A-644. Spudding.

A. P. Lieser No. 1 W. E. Brown, sec. 2,421, T.E&L. Sur. Spudding.

H. D. Lyon No. 1 J. H. White, Blk. 42, A.T.N.C.L. Sur. Spudding.

E. C. Norwood et al No. 1 W. P. Ferguson, sec. 4, F. Peterswick Sur. A-343. Drlg. 2,395 ft.

Baylor County

H. J. Baker No. 1 J. R. Martin, sec. 233, T.&N.O. Sur. Drlg. 1,270 ft.

Hampton et al No. 1 A. G. Cochrell, sec. 2,404, T.E.&L. Sur. S.D.O. 1,385 ft.

Clay County

Bridwell Oil Co. No. 1 Edrington Est., sec. 24, B.B.B.&C. Sur. Loc.

W. Gant No. 2 C. M. Worsham, D.L.&C.A. Sur. 1,073. T.D. 5,127 ft.; P.B. and testing L. 3,395-3,407 ft.

Healdton O. & G. Co. No. 1 Wallace, Belcher Subd. Drlg. 1,990 ft.

Cooke County

W. O. Russell No. 1 Bundy P. Cady. Sur. Testing S.S.O. 2,164-68 ft.

W. O. Russell No. 1 J. W. Sherrill, Wm. Phelps Sur. A-821. Drlg. 1,780 ft.

Whitfield, Pearson & Grimes No. 1 W. G. Dozier. Derrick material on ground.

Denton County

W. C. Curry et al No. 1 G. F. Owens, N. Rudder Sur. A-1060. Drlg. 1,005 ft.

Bruce Lee No. 1 Boyles, S. Ross Sur. A-112. S.D. 1,735 ft.

Scroggins et al No. 1 S. M. Freeman, Bradshaw Sur. A-104. S.D.O. 2,185 ft.

Wells-Dodson-Pearson No. 1 Hughes, B.B.B.&C. Sur. A-1252. S.D.O. 2,200 ft.

Foard County

O. P. Burnham No. 1 T. L. Ward, sec. 21, H.&T.C. Sur. Drlg. 2,350 ft.

Texas Co. No. 14 Johnson, sec. 37, S.P. R.R. Sur., Blk. L. Drlg. 2,700 ft.

Grayson County

Denver P. & R. No. 1 Cannon, A. Berry Sur. A-130. Recement plug.

Pearson Tubing Co. No. 1 J. H. Thompson, W. A. Warner Sur. A-1350. Drlg. 2,330 ft.

Jack County

J. B. Burris No. 1 W. J. Eatherly, John Helmstutler Sur. A-1,267. Drlg. 2,250 ft.

Hamilton Pet. Co. No. 1 Johnson Brothers, Spottswood Sur. A-531. Drlg. 1,750 ft.

Hammon, W. H., No. 2 George E. Evett, sec. 2, W.C.R.R. Sur. Drlg. 1,610 ft.

Hanlon-Buchanan, Inc., No. 1 Ed M. Myers, N. F. Rudmose A-1803. Drlg. 1,400 ft.

Hanlon-Buchanan, Inc., No. 1-A E. R. and W. Worthington, S.A.&M.G. Sur. A-589. 6⅝-in. 2,350 ft.; O.S. 2,360-70 ft.; bailing 6 bbls. per hour.

Nelson Oil Synd. No. 1 J. E. Henderson A, T. J. Walden Sur. A-914. R.U.R.

O. J. Perrin No. 1 J. S. Rhodes, J. W. Coates Sur. A-1,240. Loc.

Riner & Kelleher No. 1 L. S. Wright et al, Z. S. Brooks Sur. A-64. R.U.R.

Taubert & McKee No. 1 R. H. Eatherly, J. H. Henderson Sur. A-1,749. Spud. and S.D.

Van Eman & Richards No. 1 Whitsell, Wm. McElroy Sur. A-559. Drlg. 900 ft.

Montague County

J. W. Sorrell et al No. 1 J. E. Walthall, Sam H. Smith Sur. A-662. Drlg. 2,385 ft.

Wichita County

Burk Royalty Co. No. 1 W. L. Hodges, Lot 8, H.T.&B. Sur. A-139. Drlg. 2,335 ft.

Consolidated Oil Co. No. 1 W. P. Ferguson, William Spillers Sur. A-257. Spudding.

Grace & Woods No. 1 W. L. Hodges, H. B. Balch Sur. A-26. 6⅝-in. 3,720 ft.; S.L.&O.S. 3,834-3,909 ft.; flowing by heads.

Hammon Hanlon Buchanan, Inc., No. 1 A. F. Fassett, sec. 1, E.T.R.R. Sur. O.S. 4,002-18 ft.; flowed 180 bbls. 3 hrs.; W.O. R.R. Com. test.

W. E. Hammon No. 1 Mrs. H. Lalk, Blk. 284, W.C.S. Sur. Drlg. 457 ft.

King Oil Co. No. 1 T. F. Mitchell, P. Castleman Sur. A-36. 6⅝-in. 3,640 ft.; R.U.S.

King Oil Co. No. 1 J. L. and T. J. Waggoner, Blk. 8, M. A. Willis Sur. Drlg. 1,200 ft.

Lebus et al No. 1 G. W. Lewis, Blk. 20, K.W.V.L. Sur. Testing.

LeBus No. 1 J. F. Miller, W. R. Eaves Sur. A-447. Tstg. after 30-qt. shot.

Patterson et al No. 1 B. C. Ellis, J. Waldschmidt Sur. A-792. S.D.O. 1,300 ft.

Felix Payne No. 1 P. R. Pace, R. J. Scott Sur. A-253. Spud. & S.D.

Seaberry & Rose No. 1 M. A. Hunt, Robert Evans Sur. A-74. Spudded and S.D.

Staley Oil Co. No. 1 First National Co., Blk. 44, K.W.V.F.L. Sur. Drlg. 3,080 ft.

E. J. Stump No. 1 M. P. Bishop, L. Netherley Sur. A-240. Drlg. 2,900 ft.

E. J. Stump et al No. 1 J. and J. Waggoner, W. R. Eaves Sur. A-753. Drlg. 3,995 ft.

Clyde Texan Oil Fields Co. No. 1 A. W. Burnside, John M. Sharp Sur. A-262 Shot S.L. 3,935-51 ft.; tstg.; W.O. R.R. Com. test.

Wilbarger County

Barry & Hayes No. 1 McGill, sec. 3, Blk. 9, H.&T.C. Sur. S.D. 3,030 ft.

W. Little No. 1 A. P. Morris, sec. 3, H.T. &C. Sur., Blk. 14. Drlg. 1,305 ft.

Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 1,900 ft.

W. W. Woolsey et al No. 1 Waggoner A, sec. 3, S.P.R.R. Sur. A-535. Drlg. 1,170 ft.

Wise County

Latex Oil Co. No. 1 C. R. Smith, J. Couch Sur. A-104. C.O. bridge; tstg.

Young County

Anzac Oil Corp. No. 1 E. S. Graham, A. Hines Sur. A-135. Drlg. 1,100 ft.

Beavers, C. E., et al No. 1 Cooper, sec. 81, T.E.&L. Sur. Drlg. 1,180 ft.

C. B. Christie No. 1 S. Dozier, I. L. Hill Sur. A-126. Drlg. 3,510 ft.

Collier & Conner No. 1 H. M. Ford, W. T. Carter Sur. A-62. Drlg. 2,600 ft.

N. B. Crenshaw No. 1 J. C. Dwight, sec. 1,444, T.E.&L. Sur. Material on ground.

L. A. Long No. 1 F. A. Burnett, E. G. Rector Sur. No. A-239. W.O.C.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

C. R. Cox, Tr., No. 1 Jan Lee, sec. 11, B.B.B.&C. Sur., NE cor. county. S.D. ?.

H. P. Evans No. 1 J. T. Hall, 2 mi. N of Bangs, 220 ft. from N line and 11,008 ft. from W line of SW¼ sec. 25, H.T. &B.R.R. Sur. Drlg. 400 ft.

Guyle Greynolds No. 4 A. Leatherwood, 5 mi. E of Cross Cut, 650 ft. from N line and 200 ft. from W line of E½ Blk. 11, Juan Dalgado Sur. Drlg. 85 ft.

R. B. Irving et al No. 1 T. C. Giddings, 390 ft. from S line and 3,382 ft. from W line of J. J. Clelland Sur., 1 mi. E Thrifty. Correct owner was Irving & Prairie Oil Co. Loc. 1,500-ft. test.

S. B. Roberts No. 1 Angell, 9 mi. SE Cross Cut, B. H. Garvin Sur. Fsg. 1,050 ft.

Ungren & Frazier and Paul Pitzer No. 1 Cox & McInnis, sec. 88, I. S. Tabor Sur. (map shows H.T.&B. Sur.). Drlg. 1,200 ft.

Callahan County

R. F. Gilman et al No. 1 W. A. Young, 5 mi. NW Clyde, sec. 37, B.B.B.&C. Sur. Drlg. 475 ft.

Hal Hughes No. 1 Poindexter, sec. 350, Geo. Hancock Sur., 2 mi. NE of Oplin. T.D. 3,175 ft.; S.D.

J. C. Jackson et al No. 1 Thompson, 2 mi. S. Eula, sec. 30, B.B.B.&C. Sur. S.D. 500 ft.

Phillips Pet. Co. No. 1 Cozart, 1 mi. NW Scranton, M. Cherry Sur. Tstg. sand at 1,711 ft.

R. F. St. John No. 1 A. E. Dyer, 4 mi. NW of Clyde, 1,385 ft. from E line and 1,323 ft. from S line of sec. 40, B.B.B. &C. Sur. Loc.

Walker & Webb No. 1 Ross, 1 mi. NE Clyde, sec. 81, B.B.B.&C. Sur. Drlg. 1,400 ft.

Woodley Pet. Co. No. 1 Flores-Deen, 5 mi. SE of Baird, sec. 149, B.B.B.&C. Sur. Drlg. 875 ft.

Coleman County

J. F. Brock No. 1 J. H. Livingston, SE cor. SW¼ county, J. D. Waters Sur. No. 208. Drlg. 390 ft.

Dixie O.&G. Co. No. 1 Reaves, 6 mi. NW of Bangs, J. M. Rhine Sur. No. 629. Drlg. 1,250 ft.

Comanche County

N. D. Gallagher et al No. 1 Mrs. B. I. Terry, Desdemona pool, N. H. Kuykendall Sur. Drlg. 4,435 ft.

Dobbs Oil Co. No. 1 Hodges, sec. 11, Blk. 2, H.&T.C. Sur. Drlg. 1,850 ft.

Eastland County

G. D. Chastain et al No. 1 Weddington, 4 mi. N. Cisco, sec. 496, S.P.R.R. Sur. Lime 3,309-30 ft.; est. 40 bbls.; drlg.

Hickok Prod. & Dev. Co. No. 1 I. E. Donovan, 5 mi. NW of Cisco, 660 ft. from N and E lines of NW¼ sec. 489, S.P. R.R. Sur. Loc.

J. D. Kittrell No. 1 Reynolds, 5 mi. E of Carbon, sec. 23, H.&T.C. Sur., Blk. 1, Drlg. 950 ft.

Monark O. & G. Co. No. 1 Downtain, sec. 14 H.&T.C. Sur. Blk. 4, 3 mi. N Eastland. S.D. 2,140 ft.

J. R. Nichols et al No. 1 R. W. Murray Hrs., 3½ mi. SE of Carbon, 330 ft. from N and W lines of SW¼ sec. 4, H.&T.C. Sur., Blk. 2. Loc. 2,100 ft.

Erath County

Arnold Oil Co. No. 1 McMillan, 2 mi. SE of Desdemona, T. H. Dixon Sur., Abst. 1,103. Drlg. 2,970 ft.

J. Hickey et al No. 1 Smith, 5 mi. SE Desdemona, J. B. Smith Sur. S.D. 3,200 ft.

Jones County

E. P. Campbell et al No. 1 L. H. Lee, 5 mi. S Hawley, sec. 16, T.&P. Sur., Blk. 16. Drlg. 1,860 ft.

Fain & McGaha Oil Corp. No. 1 Mrs. L. E. Williams, 3½ mi. SW Nugent, 220 ft. from S & W lines of NE¼ of Sec. 37, T.&P. Sur., Blk. 15. Loc.

Felmont & Adams No. 1 Woodson, 1½ mi. SE Avoca, sec. 200, B.B.B.&C. Sur. S.D. 2,550 ft.

Grisham & Hunter No. 1 E. D. Appling, NW¼ county, 1,208 ft. from S line and 1,450 ft. from W line of SW¼ sec. 32, B.B.B.&C. Sur. Drlg. 1,200 ft.

Mack Hayes and Montour Oil Co. No. 1 Chittenden, 7 mi. SE Hamlin, Subd. 18, McMullen & McGloin Sur. 337. Drlg. 1,335 ft.

W. L. Herring et al No. 1 J. W. Grogan, ½ mi. SE Truly, Maria Rita Longario Sur. Drlg. 2,600 ft.

T. D. Humphrey No. 1 Fielder, 2½ mi. E Anson, sec. 34, O.A.L. Sur. Drlg. 550 ft.

Iron Mountain and Humble No. 2 Jones & Stasney, 3 mi. NE of Avoca, sec. 196, B.B.B.&C. Sur. S.D. 3,190 ft.

A. P. Kouri No. 1 J. C. Fielder et al, 5 mi. NW Nugent, 220 ft. from S and E lines of 80-ac. lease or approx. 1,600 ft. from N line and 2,700 ft. from E line of sec. 2. Drlg. 820 ft., T.&N.O. Sur., Sec. 2, Blk. 2, Loc.

Bells Wells Oil Co. No. 1 M. Caton. S.D.

Oil States Expl. Co. No. 1 Olson, 4 mi. N Avoca, sec. 182, B.B.B.&C. Sur. Drlg. 2,230 ft.

Medders & Heydrick No. 1 Ann Shaheen, 2 mi. SW of Nugent, 220 ft. from S and E lines of most easterly SE cor. of sec. 50, T.&P. Sur., Blk. 15. Drlg. 1,220 ft.

Owen M. Murray et al No. 1 Rial, 2 mi. E Avoca, sec. 198, B.B.B.&C. Sur. Drlg. 2,160 ft.

Pet. Producers No. 1 J. S. Millsap et al, 3½ mi. SW Nugent, 220 ft. from S and E lines of NW¼ sec. 37, T.&P. Sur., Blk. 15. Drlg. 1,280 ft.

Riddle et al No. 1 J. D. Freeman, 8 mi. SW Anson, sec. 6, T.&P. Sur., Blk. 17. Drlg. 2,490 ft.

Roeser & Pendleton No. 1 fee, 2 mi. NW of Nugent, 2,800 ft. from N line and 3,240 ft. from W line of sec. 4, T.&P. Sur., Blk. 15. Drlg. 830 ft.

Shaheen Oil Co. et al No. 1 Jenson, 2 mi. E of Avoca, sec. 198, B.B.B.&C. Sur. Drlg. 2,270 ft.

Dale Smith & Bert Fields No. 1 C. L. Carter, 3 mi. SW of Nugent, 220 ft. from N and W lines of SE¼ of SE¼ sec 37, T.&P. Sur., Blk. 15. Drlg. 75 ft.

Stanton & Miller No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. Drlg. 2,070 ft.

Ungren & Frazier No. 1 Manley Heirs, SE cor. of county, 660 ft. from N and W lines of sec. 44, T.&P. Sur., Blk. 14. Drlg. 1,525 ft.

C. E. Waite, Trust, No. 1 Ray, 3½ mi. SE of Stamford, sec. 7, D.&D.A. Sur. Drlg. 2,547 ft.

Mills County

Balyaet & Boyd No. 1 Westbrook, 7 mi. W of Goldthwaite, 4,950 ft. from S line and 4,290 ft. from W line of Caldwell Co. Sch. Ld. Sur. Drlg. 875 ft.

Palo Pinto County

Brazos River Gas Co. No. 5 M. B. Costello B, 1½ mi. N Pickwick, 1,397 ft. from N line and 150 ft. from W line of survey (W line being river bank), 660 ft. SW No. 4, R. R. Williams Sur. Drlg. 200 ft.

W. H. Clement No. 1 Federal Life Ins. Co., 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B), S.D. for pipe 400 ft.

Bill Cole et al No. 1 J. W. Harris Est., NW cor. county, De La Garza Sur. Drlg. 875 ft.

W. K. Gordon et al No. 1 Johnson, 5 mi. N Gordon, John Bird Sur. S.D. 1,200 ft.

Henry Hobbs et al No. 1 Bessie Holt, 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. S.D. 200 ft.

King Oil Co. No. 1 S. F. Lee, 4 mi. NW Graford, 933 ft. from N and W lines of sec. 1,744, T.E.&L. Sur. Drlg. 575 ft.

Ernest Lloyd et al No. 1 McClure, 3 mi. NE Graford, sec. 2,004, T.E.&L. Sur. S.D. 1,200 for cag.

Shackelford County

J. F. Baker No. 1 Merrick Davis, NE cor. of S½ of county, 330 ft. from N and W lines of sec. 21, T.&P. Sur., Blk. 13. S.D. 1,890 ft.

Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test; drlg. 300 ft.

Forest Dev. Corp. No. 1 T. G. Hindrick, NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1, A.B.&M. Sur. Drlg. 150 ft.

T. D. Humphrey No. 1 Alston, NE cor. county, sec. 16, H.&T.C. Sur., Blk. 3 Drlg. 1,075 ft.

C. J. Kleiner et al No. 1 Morris, 2 mi. NE Bluff Creek pool, sec. 187, E.T.R.R. Sur. Drlg. 1,600 ft.

Mesa Verde Oil Co. No. 1 Hennessey, 7 mi. E of SW cor. county, sec. 87, T.&P. Sur., Blk. 13. Drlg. 1,560 ft.

Owens-Snebold Oil Corp. No. 1 Haterius, sec. 163, B.B.B.&C. Sur. Drlg. 2,556 ft.

Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Aileen Copeland, 8 mi. SE Ivan, 1,196 ft. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. Loc.

I. C. Little No. 1 R. M. Rogers, NE¼ of county, 150 ft. from E line and 1,980 ft. from S line of sec. 28, T.&P. Sur., Blk. 5. Loc.

G. Willard Rich No. 1 M. M. Andrews, SW cor. county, 450 ft. from S line and 300 ft. from W line of N½ sec. 39, T. &P. Sur., Blk. 7. Loc.; 4,500-ft. test.

Stonewall County

General Crude Oil Co. No. 1 B. F. Harrison, NW cor. D. Harcrow Sur., 1½ mi. N of No. 1 Bryan. Drlg. 3,567 ft.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. S.D.O 2,140 ft

Taylor County

Bert Fields et al No. 1 Sears, sec. 223, Blk. 64, H.&T.C. Sur. Drlg. 900 ft.

Dale H. Dorn No. 1 Hopkins, 1 mi. NW View, Subd. 20, sec. 120, Guadalupe Co. Sch. Ld. Sur. S.D. 3,100 ft.

A. Findley No. 1 Bowles Est., NE cor. county, sec. 26, B.A.L. Sur. S.D. 1,976 ft.

Throckmorton County

Morris & Spoonts No. 1 Alden Bros., NW cor county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Loc.

Henry Zweifel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. Loc.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E of Bridgeport, Jas. Couch Sur. T.D. 4,075 ft.; C.O. bridge; testing.

NORTH TEXAS COMPLETIONS

Archer County

Duncan & Marchman No. 11 N. I. Andrews, 993 feet, dry. Van Wormer & Boller No. 8 Falls Co., 1,157-77 feet, 35 bbls.

Clay County

W. H. Gant No. 5 C. M. Worsham, 3,378-88 feet, 50 bbls.

Cooke County

Fain & McGaha No. 2 J. W. Mount, 1,475-1,705 feet, 5 bbls. Gill & Witherspoon No. 1 Mrs. O. Wilson, 790-908 feet, 10 bbls. Pace Petroleum Co. No. 12 R. E. Aldridge, 1,136-70 feet, 40 bbls.; No. 13 R. E. Aldridge, 1,157-83 feet, 37 bbls.; No. 1 J. R. Winstead B, 1,115-73 feet, 50 bbls. E. J. Ruwaldt No. 1 G. T. Andress, 824-38 feet, 25 bbls. Trumter Oil Co. No. 6 G. T. Andress, 745-80 feet, 36 bbls.; No. 7 G. T. Andress, 752-89 feet, 38 bbls. Trumter Oil Co. and others No. 13 G. T. Andress, 766-97 feet, 75 bbls.

Jack County

J. B. Baker, Jr. No. 1 J. H. Wallace, 525 feet, dry. Burk Royalty Co. No. 4 S. M. Jones, 2,985-3,125 feet, 400 bbls. Cockburn Oil Co. No. 2 R. R. Clayton A, 2,980-3,120 feet, 535 bbls. Long & Wolfe No. 6 W. J. Smith, 2,938-72 feet, 260 bbls. Hattie B. Madden No. 1 J. L. Mask, 3,013 feet, dry. Mullendore & Berry No. 6 R. R. Clayton, 2,965-3,086 feet, 375 bbls. J. C. Shaffer No. 1 J. O. Hester, 2,970-91 feet, 4,000,000 feet gas. Taubert & McKee No. 3 J. R. Clayton, 2,968-3,000 feet, 420 bbls.

Wichita County

Bridwell Oil Co. No. 22 H. Willis, 259-70 feet, 10 bbls. G. C. Browning and others No. 1 Chilson, 800 feet, dry. Deep Oil Development Co. No. 1 Munger Farm Co. F, 3,750-3,880 feet, 760 bbls. Deep Oil and Bonner No. 1 Munger Farm Co. H, 3,685-3,850 feet, 525 bbls.; No. 3 Munger Farm Co. H, 3,680-3,850 feet, 735 bbls. Forbess & Golden No. 4 C. A. Mertins, 470-75 feet, 10 bbls. Golding & Cochran No. 2 Mrs. G. Jennings, 2,119 feet, dry. Jack E. Kadane No. 1 C. A. Mangold, 3,650-3,750 feet, flowing 4,500 bbls. (wildcat). Petroleum Production Co. No. 78 First National Co., 3,677-3,860 feet, 560 bbls. George Proctor No. 20 Foster A, 1,951 feet, dry. S. H. Walton No. 10 Will Burnett, 475-85 feet, 10 bbls.

Young County

Fred Foote, Jr. No. 1 E. R. Williams, 637 feet, dry. Rathke Oil Co. No. 1 O. W. Hill, 3,618-4,060 feet, 50 bbls. Sutton & Wellman No. 1 J. R. Garvey, 810 feet, dry. W. K. Royalty Co. No. 1 J. A. Wright, 4,575 feet, dry. West & Honea No. 11 G. P. Stewart, 825-50 feet, 50 bbls.

CENTRAL TEXAS COMPLETIONS

Erath County

Hoffman & Page No. 1 W. C. Clayton, total depth 3,232 feet, dry and abandoned.

Runnels County

Stevens & Glover No. 1 W. J. Fowler, total depth 1,095 feet, dry and abandoned but not plugged.

Jones County

Fain & McGaha Oil Corp. and S. B. Roberts No. 1 W. H. Daugherty, 1,927-54 feet, shot with 40 quarts, 650 bbls. per day; No. 1 Francis Olson, 3,212-18 feet, 816 bbls. in 18 hours. Ungren & Frazier and Jones & Stasney No. 1 Carl Ecdahl, total depth 3,306 feet, dry and abandoned.

Shackelford County

Crawford, Grover & Rose No. 5 J. P. Morris, total depth 1,552 feet, completed for key well. Hickok & Reynolds No. 1 W. D. Baker, total depth 1,925 feet, dry and abandoned. Roeser & Pendleton and Continental No. 28-A-85 Cook, total depth 3,186 feet, dry and abandoned.

Stephens County

W. B. Hamilton No. 1 B. O. Grant, total depth 2,918 feet, dry and abandoned. O. J. Perren No. 1 J. K. P. Hughes, top Caddo lime 3,352 feet, lime and sandy lime 3,785-4,010 feet, several hundred feet of open hole, pay may be coming from any or all of them, total depth 4,010 feet, 20 bbls. of oil per day.

Taylor County

William Hix & Co. No. 1 A. H. Spencer, abandoned location.

New Pool in Illinois

MATTOON, Ill., Nov. 23.—Adams Oil & Gas Co. and Felmont Corp. have opened a new shallow pool in Clinton County with No. 1 Schmitz, SE NE NE section 2-1n-1w, in the Centralia district. It had Benoist sand at 1,347-76 feet, total depth 1,387 feet, and swabbed 98 bbls. in nine hours. It will be put on the pump. The Shell, Gulf and Carter companies have nearby acreage. Duncan Brothers No. 1 Riggs, NW NW SE section 27-2n-8e, in Wayne County, which came in some time ago at 583 bbls. a day, natural flow, from McClosky lime at 3,030-40 feet, was acidized later and is said to have flowed 2,000 bbls. a day.

Canadian Fields

(Continued from Page 106)

sections on which the joint companies will have priority rights.

Drilling in Ontario

In the De Clute field, Kent County, Ontario, Union Gas Co. No. 32, Lot 142, South Talbot Road, Raleigh Township, finished at 1,562 feet with 4,300,000 feet a day. Union Gas Co. No. 36 is being started on the Guyett farm, Lot 144, North Talbot Road, and Union No. 37 on the same lot. Gas Producers Syndicate No. 4, Pardo farm, is below 1,400 feet.

In the Dover field, Kent County, E. P. Rowe No. 1 Johnston farm, Lot 5, Front Concession, Raleigh Township, is below 1,800 feet.

In the Chatham Township field, Union Gas Co. has located its No. 17 test, in Lot 28, Baldoon, Dover East Township. This is practically a wildcat test, being about 3 miles west of the nearest Chatham Township producers. It is rigging, to spud in a few days.

In the Brownsville field, Oxford County, Aloka Oil & Gas Co. No. 16, Watterworth farm, Lot 23, Concession 12, Dereham Township, has finished around 935 feet with over 1,000,000 feet a day. Aloka No. 2 Watterworth, Lot 24, Concession 12, is starting. Central Pipe Line Co. No. 2, Thomas R. Farrow farm, Lot 26, Concession 11, is rigging. W. C. Patterson No. 1, Lindsay farm, NW quarter Lot 9, Concession 10, Bayham Township, is drilling. Rogers, Holmes & Jackson No. 1 Connor, Lot 11, Concession 10, Bayham Township, is starting.

In the Eden field, E. P. Rowe No. 2, Carman Ball farm, Lot 27, Concession 8, Bayham Township, is starting.

In Middlesex County, McKechnie, Spaulding & Connors No. 1 Knott, Lot 24, Concession B, South River Thames, North Dorchester Township, is below 1,400 feet after drilling through the Clinton sand without a show.

In Elgin County, Oldreive & McKechnie No. 1 Miller, Lot 12, Concession 10, Yarmouth Township, is below 300 feet.

In Essex County, Eugene Coste & Co. No. 2 Reaume, Lot 6, Concession 3, Tilbury North Township, is shut down at 1,450 feet.

In Oxford County, Volcanic Gas & Oil Co. No. 3, Lot 35, Concession 10, East Nissouri Township, is below 1,350 feet.

German Gasoline and Fuel Oil Supply

Germany will soon be able to supply all its own needs in gasoline and fuel oil, according to Prof. Friedrich Bergius, as reported in a Hamburg dispatch to the New York Times. Present calculations indicate only 3 to 4 per cent of Germany's annual coal output will be needed to fill its gasoline requirements.

This rapid advance toward self-sufficiency results chiefly from introduction of the Fischer synthetic process.

Since the war attempts to make fuel oil from coal have been carried on continuously. During recent years the method of Dr. Friedrich Bergius of Heidelberg University has generally been accepted. Very recently, however, the system of Doctor Fischer has been taken over, and in Germany it is generally believed it will be used exclusively.

The Fischer system differs from the Bergius principally in that only medium temperature and pressure are applied. The primary principle of the process consists in combining hydrogen with coal by means of heat and pressure. The coal is first ground into small pieces and then mixed with heavy oil.

Under the Bergius process the mixture is placed in a steel retort and heated to about 800° F. under a pressure of approximately 3,000 pounds to the square inch. Most of the carbon unites with the hydrogen, giving a complex mixture of gaseous, liquid and solid compounds from which fuel oil can be made.

Stanolind Adds to Holdings

SHREVEPORT, La., Nov. 22.—On the east flank of the Cotton Valley field, Webster Parish, Louisiana, Stanolind Oil & Gas Co. has added to its holdings, taking 300 acres on assignment from G. G. Nesbit, Jr., for consideration reported at $12,000. Leases are located in the SW quarter NW SE, S half NW quarter and N half SW NE section 31-21-9.

The company also bought the SE SW and SW SE section 19, and N half NE NW section 31, Township 21-9. Consideration for this 100 acres was reported at $15,000 cash, and equal amount in oil.

Holdings of Stanolind in the area include approximately 700 acres it obtained several months ago from the Pardee company. A 1¼-mile southeast outpost location has been staked by the company at No. 1 Pardee, section 36-21-10.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1937 High	1937 Low	Week ending Nov. 20 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
114⅞	53½	3,200	64	53½	54¼	Amerada Corp.	788,675	N.P.	50cQ	10-30-37	$2.00	125½	75	80	48½
37	18	10,200	23¼	19⅞	20½	Atlantic Refining	2,664,000	$25	25cQ	12-15-37	1.25	35⅛	26⅝	28	20½
43⅜	10⅛	8,400	18⅞	14	14½	Barber Co.	387,149	$10	75c	12-16-37	.50	38½	21	22½	11¾
35¼	10	15,900	15½	12½	13	Barnsdall Oil Co.	2,247,974	$5	25cQ	11-1-37	.80	28¼	14⅛	14¾	5⅞
20⅞	4⅝	89,100	11	8½	9½	Columbia Gas & Elec.	11,610,036	N.P.	20c	5-15-37	.40	23⅝	14	15¾	3⅜
17⅞	7	24,900	10⅝	9⅛	9⅜	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	11-15-37	.80	17¼	11½	12¼	6½
49	24	22,100	32½	26	27	Continental Oil of Delaware	4,682,615	$5	50cQ†	9-30-37	1.50	44⅞	28⅛	35	15⅛
17⅝	4¾	24,500	8½	6¾	7	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	13⅞	6⅜	7	1½
35⅜	14	5,400	21¼	17¼	17⅜	Mid-Continent Petroleum	1,855,912	$10	$1	21-1-37	1.15	30⅞	17¼	20½	9½
34	16⅛	1,600	18½	16¼	16¼	Mission Corporation	1,399,345	N.P.	$1	6-15-37	.45	29⅞	16¾	17⅜	10⅜
26¼	20	20,500	25½	20	22	National Supply	382,591	$25	$2 pf.‡	12-22-37	....	75½	19⅞	20⅞	9
22⅞	9	21,000	13¼	11½	12	Ohio Oil Co.	6,563,377	N.P.	50cSA	12-15-37	.60	18	12⅛	14¼	9¼
29¾	12⅛	2,400	14½	13	13	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	23½	11¾	14	6¾
4½	1	800	1⅝	1¼	1¼	Panhandle P. & R.	198,770	N.P.	....	.....		4¼	1⅜	1⅞	½
64	30⅛	23,800	45⅜	38⅝	39⅞	Phillips Petroleum	4,449,052	N.P.	75cQ†	12-1-37	2.50	52⅜	38⅛	40	13¾
29⅞	13	4,300	19⅜	16½	17	Plymouth Oil Co.	1,050,000	$5	35cQ	9-30-37	.90	27¾	11⅞	13	6½
24⅜	8¾	43,500	13⅜	10¾	11¾	Pure Oil Co.	3,281,120	N.P.	....	9-1-30	....	24⅞	16	17	5⅞
54⅛	16	7,400	23½	19⅞	20½	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	9-15-37	1.00	44	30½	36⅞	20¾
34¾	15½	4,000	18⅝	16	16½	Shell Union Oil	13,070,625	N.P.	50c	7-15-37	.25	28¼	14¾	16½	5½
105⅜	94½	500	98	97⅜	97⅜	Shell Union Oil 5½% pfd.	343,500	$100	$1.37½Q	10-1-37	28.87½	127½	102	111	63⅛
4¼	2½	1,300	2¾	2⅝	2¾	Simms Petroleum	461,698	$10	75c liq.	11-3-37	2.25 liq.	6¾	3½	18⅜	4¾
60⅝	28⅛	2,600	34¾	28⅛	28½	Skelly Oil	1,006,348	$15	50c	9-30-37		47⅜	19½	20½	6½
23¼	13	52,600	17	14¼	15	Socony-Vacuum	31,151,071	$15	30c	12-15-37	.70	17½	12½	15¾	10⅝
50	28	19,700	31⅞	29¾	30⅛	Standard Oil of California	13,014,754	N.P.	80cQ†	12-15-37	1.20	47⅝	35	41⅛	27¾
50	26½	15,300	34¾	31⅝	32⅛	Standard Oil (Indiana)	15,196,241	$25	$1Q†	12-15-37	2.40	48½	32¾	33⅜	23
36½	30⅝	200	32½	32½	32½	Standard Oil of Kansas	134,841	$10	$1	12-26-36	1.00	31	25	32	20
76	42½	26,300	50⅛	44¼	45½	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-37	2.00	70⅜	51⅛	52⅜	35⅜
77½	54	1,400	59	57	57	Sun Oil	2,156,825	N.P.	25cQ	9-15-37	$1 & 6% Stk.	91	70	77	60½
65⅛	34¾	53,900	43⅝	36½	38	Texas Corp.	10,896,858	$25	50cQ	10-1-37	1.50	55¼	28⅞	30¼	16½
9⅝	2	23,700	4⅝	3⅝	3⅞	Texas Gulf Producing Co.	888,132	N.P.	10c	12-23-37	.05	8⅞	4⅜	4¾	2½
15⅝	5⅜	9,400	9¼	7⅜	8	Texas Pacific Coal & Oil	888,237	$10	10c	12-1-37	.25	15¼	7½	9¼	3¼
21⅝	13⅛	9,200	15¾	13¾	14	Tide Water Associated	6,288,512	N.P.	35cQ†	9-1-37	.70	21¾	14¾	15⅞	7⅝
28¼	17½	4,500	21¼	19⅝	19¾	Union Oil of California	4,386,070	$25	55cQ†	11-10-37	1.00	28½	20¾	24	14¾
31½	22½	1,000	22¾	22½	22⅝	Union Tank Car Co.	1,200,000	N.P.	40cQ	12-1-37	1.20	31⅝	22⅝	26½	20⅞
6¼	1¾	12,500	2½	2¼	2½	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¼	2¾	3⅛	1

*Ex-dividend. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1937 High	1937 Low	Week ending Nov. 20 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
21⅜	7	1,500	11¼	10	10	Bridgeport Machine Co.	260,000	N.P.	25c	9-30-37	$1.00	21	13¼	14⅛	3⅝
51½	42	150	41	40⅛	40⅛	Buckeye Pipe Line Co.	200,000	$50	75cQ	12-15-37	3.25	50	39¾	42½	30⅛
2¾	¾	700	1¼	1⅛	1⅛	Carib Syndicate	799,020	25c	....	.....	...	4⅞	1⅞	4¼	1⅝
123	95½	200	101	98	101	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-30-37	7.00	124¾	105	157	115
5⅜	1½	32,100	2½	2	2	Cities Service	37,804,394	N.P.	....	6-1-32	....	7⅜	3	3¼	⅝
5½	1½	5,900	2½	1⅞	2	Cosden Petroleum	399,687	$1	....	.....	....	4½	1½	1½	¼
38¾	20¼	12,400	26¼	21	22½	Creole Petroleum	6,974,356	$5	50cSA†	12-15-37	.50	39	19⅞	23¾	10
18⅝	6½	1,200	8	7¼	7¼	Darby Petroleum	351,390	$5	25cSA	1-15-38	.50	18⅛	9	8⅞	4
8⅜	2¼	500	4¼	3⅝	3⅝	Derby Oil & Refining	263,162	N.P.	....	.....	....	6¾	1⅞	2	⅝
47½	24½	100	30	29¾	29¾	Eureka Pipe Line	50,000	$50	$1Q	11-1-37	4.00	47½	38½	38	33¼
63½	33	8,200	41	36⅝	37	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-37	1.50, 100% Stk.	59	36	74¾	50¼
87	55	6,300	60¾	57	57½	Humble Oil & Refining	8,923,935	N.P.	62½cQ	10-1-37	1.50	80	57	64	44
24¼	14½	5,600	18⅝	18	18	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-37	1.25	24½	19¾	22½	15⅝
15	5⅞	700	8	7½	7½	Indiana Pipe Line	300,000	$10	50cSA	11-15-37	.80	9¾	5½	6⅛	3⅝
39½	23½	4,900	30½	29½	29½	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-37	2.50	39⅝	32⅝	39¾	28
15¼	7	5,100	8⅜	7⅜	7½	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	9-15-37	.50	15⅜	9⅞	11⅜	4⅜
34	12½	4,400	20½	17½	18	Lion Oil Refining	270,000	N.P.	25cQ	10-20-37	.75	17¾	7⅜	8⅛	3½
14¼	5¼	3,100	8⅜	7½	7½	Lone Star Gas	5,382,723	N.P.	20c	12-22-37	.60	14¼	9⅞	10⅞	4½
14⅝	6¼	1,300	7⅝	7½	7⅝	Midwest Oil Co.	998,444	$10	50c	12-15-37	....	....	..	..	..
7⅞	4⅛	3,200	5	4⅝	4⅝	Mountain Producers	1,682,182	$10	30cSA	12-15-37	.60	8⅜	5	5¾	4⅛
19½	12	2,000	13¾	13⅜	13½	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-37	1.00	23	17⅜	20	11¾
12½	7¼	2,300	8⅝	8⅛	8¼	National Transit	509,000	$12.50	45cSA	6-15-37	.75	15¾	9¼	10⅝	6¾
6⅛	4¼	No sales	..	..	..	New Bradford Oil	1,445,202	$5	18c	9-17-37	.10	4⅝	2⅞	3¼	2
5	1⅛	700	1½	1⅜	1⅜	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	6⅝	1⅝	2½	1
5⅜	4	200	4½	4½	4½	New York Transit	100,000	$5	25cSA	10-15-37	.35	6¼	4¼	4⅞	3
12¾	5¾	100	6⅛	6⅛	6⅛	Northern Pipe Line	120,000	$10	25cSA	12-1-37	.40	9¾	4⅞	8	5¼
9⅝	2¾	31,400	5⅝	4½	4⅝	Pantepec Oil	1,608,700	N.P.	....	.....	....	10⅛	3¼	4⅜	1¼
13¾	2	1,100	3½	3	2⅞	Root Petroleum Co.	336,045	$1	25c	2-1-37	.50	19¼	4½	5	1½
6½	2¼	500	3¼	3	3⅛	Ryan Consolidated	296,931	N.P.	....	.....	....	4¾	1⅞	2½	⅝
56	35	1,100	38¾	36½	37	South Penn Oil	1,000,000	$25	$1.15Q†	9-30-37	2.60	44	32½	34½	21⅝
7¼	3⅞	No sales	..	..	..	Southern Pipe Line	100,000	$10	25cSA	9-1-37	.25	7⅞	3¼	5	3⅞
42	20⅝	No sales	..	..	..	South West Penna. Pine Lines	35,000	$50	50cQ	10-1-37	13.00	60	44	56	44¼
21⅛	14¾	2,100	17¾	16⅞	17¼	Standard Oil of Kentucky	2,604,790	$10	40cQ†	9-15-37	1.35	23⅜	17⅛	24	18
13¾	8	1,300	9	8½	8½	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	14⅝	11	12	7¾
45	16	1,000	25½	22½	23	Standard Oil of Ohio	753,740	$25	25cQ	9-15-37	2.00	40	21¾	23⅝	11½
4⅞	2	8,000	3⅛	2¾	2¾	Sunray Oil	1,910,119	$1	10c	12-24-37	.10	5	2⅝	2⅞	⅞
7⅝	2	400	4¾	4⅛	4⅛	Texon Oil & Land	336,028	$2	15cQ	9-3-37	.60	9¾	5⅜	6⅞	5

*Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

PERSONAL

LOU WILKE, who was assistant manager in Wichita, Kans., for the sales department of the Phillips Petroleum Company, has been transferred to Denver, Colo., in a similar capacity. H. E. SMITH, formerly at Oklahoma City, succeeds Mr. Wilke in Wichita.

BERNARD J. MULLANEY, who resigned this month as vice president of the Peoples Gas Light & Coke Company, Chicago, retiring from active business life, has been a member of the executive board of the American Gas Association since 1922. He was president of the association in 1929-30 and a vice president in 1927-29. After working as a farm hand and schoolteacher in New York state, where he was born, Mr. Mullaney went to Minneapolis, Minn., where he entered newspaper work. Later he was reporter, editorial executive and political editor of the old Chicago Herald. Shortly after the close of the World War he joined the Peoples.

C. A. MOON, until recently field manager in Trinidad for the Trinidad Petroleum Development Company, Ltd., has joined the development and production staff of Deutsche-Vacuum Oil A.-G. in Hamburg, Germany.

FRED J. STEPHENS, from the London office of the Anglo-Saxon Petroleum Company, Ltd., is a business visitor in New York. Mr. Stephens has served in various capacities with subsidiaries of the Royal Dutch-Shell group, including a term in Venezuela.

WILLIAM C. DORSET, manager of the research and development department of the Petroleum Conversion Corporation, Texas City, Tex., recently visited Muskegon, Mich., where he inspected a plant installation of the Old Dutch Refining Company. From there he left for New York, to visit headquarters of his company.

E. R. BROWN, president of the Magnolia Petroleum Company, Dallas, Tex., and MRS. BROWN found themselves surrounded by ship news reporters when they returned to New York aboard the Bremen November 11. The Browns occupied the suite originally reserved for the Duke and Duchess of Windsor, which was made available for reassignment when the trip to the United States was canceled.

THOMAS N. McCARTER, president of the Public Service Corporation, Newark, N. J., was honor guest at a recent luncheon at the Essex Club, Newark, given by the directors of the company in celebration of Mr. McCarter's seventieth birthday. Not only was Mr. McCarter one of the founders of Public Service, organized in 1903, but he is the only president the company has had. Last April the directors by resolution waived in his case the provision making retirement at 70 compulsory, because his usefulness to the company was too great to let him go. The directors of the Fidelity Union Trust Company took similar action with reference to Mr. McCarter's retirement from their board, as a result of which he will continue as its chairman.

C. M. LEONARD, of Chicago, president of the Shoreline Oil Company, is visiting the Shreveport, La., territory.

B. B. SIMON, assistant treasurer of the Ohio Oil Company, Tulsa, is on his annual hunting trip in Missouri and Kansas.

WILLIE WILCOX, chief clerk for the Stanolind Oil & Gas Company in Houston, Tex., is spending his vacation at various places on the Gulf Coast.

S. E. ADAIR, petroleum geologist of Cut Bank, Mont., is in the Lance Creek field for a group of operators who plan to drill a deep test on the west side of the field.

C. R. BENDER, scout for the West Production Company, Houston, Tex., was critically injured in an automobile accident on the Houston-Galveston highway near South Houston.

A. CLARKE BEDFORD, president, and R. T. HASLAM, general sales manager, led a group of officials of the Colonial Beacon Oil Company on a trip of inspection of the company's properties in New York state last week.

J. W. GILLILAND, president of the General American Oil Company, large operator in the East Texas field, has announced removal of the company's headquarters from Shreveport, La., to Dallas, Tex. The Longview and Gladewater offices will be combined with the one in Dallas, Mr. Gilliland said. The company recently purchased the production and pipe line facilities of the Barnsdall Oil Corporation in East Texas. A. H. MEADOWS is vice president and secretary of the company, and M. E. WILSON is vice president and treasurer.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Pennsylvania Grade crude is advanced 5 cents to $1.85 per barrel, the highest price in eight years. Kansas-Oklahoma crude is advanced to 76 cents per barrel which is 41 cents above the lowest posted price for Mid-Continent crude.

While Frank Phillips, Bartlesville, Okla., oil man was in New York on business, his brothers, Lee and Waite, staged a raccoon hunt. All engaged had a good time including the raccoons, which remained away from the party.

George B. Cappeau, 41, American oil man, dies in Burmah, where he had been employed by an oil company.

Walter B. Sharp, president of the Producers Oil Company (Texas Company), dies in Chicago where he had undergone an operation.

20 YEARS AGO

A new well of Fortuna Oil Company in section 27-19-4, Payne County, producing 80 barrels an hour at 3,851-57 feet, is the deepest producer in Oklahoma.

In the third-quarter of 1917 Producers Oil Company (Texas Company) was the largest producer of crude oil in Texas with 2,017,438 barrels. Gulf Production Company was second with 1,860,869 barrels, Magnolia third with 1,045,206 barrels, and Humble Oil & Refining Company fourth with 924,438 barrels.

Exchange National Bank of Tulsa increases its capital from $750,000 to $1,000,000.

10 YEARS AGO

Erastus T. Patterson, treasurer of the Prairie Oil & Gas Company, dies in Independence, Kans. He had been with one or another of the Standard Oil group of companies for 43 years.

Dr. Israel C. White, state geologist of West Virginia, who is credited with having first advanced the anticlinal theory in petroleum geology, dies in a Baltimore, Md., hospital.

I. W. FOX, formerly of Pittsburgh, Pa., has joined the engineering staff of the Texas Company in Tulsa.

FRANK O. PRIOR, president of the Stanolind Oil & Gas Company, Tulsa, was in New York last week on business.

FREDERICK G. CLAPP, vice president of Inland Exploration Company, is en route to Afghanistan, where he will join company geologists working in that territory.

E. M. MORRISON, JR., has resigned from the Shell Oil Company in New York to become sales manager of the Royal Petroleum Corporation, that city. Mr. Morrison has been a well-known figure in oil-marketing circles in New York for many years.

J. L. STEPHENS, formerly district engineer in the Kern River district for the Chanslor-Canfield Midway Oil Company, has been promoted to division engineer in the San Joaquin Valley. His office has been established at the company's camp near Fellows, Calif.

GEORGE ED FOSTER, veteran employe of the Barnsdall Oil Company, Tulsa, has been retired on age. He is suceeded as manager of the material department by GEORGE NOLAND. Mr. Foster had been in the service of Barnsdall for about 40 years.

H. A. BLETHEN, chief clerk of the General Petroleum Corporation's Rocky Mountain division, accompanied by MRS. BLETHEN, is spending a vacation on the West Coast. During his absence from his office in Casper, Wyo., his duties are being taken care of by T. D. GATES.

PARAGRAPHS

ANGUS McLEOD, chief geologist for the Shell Oil Company in Los Angeles, Calif., and MRS. McLEOD suffered severe injuries in an automobile accident on Lake Arrowhead road, that city, when a truck out of control ran into their car head-on. It is not believed the injuries of either will be permanent.

DOUGLAS FYFE has returned to Lima, Peru, after a 60-day stay in Los Angeles, Calif. Mr. Fyfe and BART W. GILLESPIE, both geologists associated with R. B. MORAN, of Los Angeles, have been together in South America for 18 months, and it is reported that a well is to be drilled as a result of their work.

J. E. MORERO, chief geologist of the Skelly Oil Company, will leave Tulsa soon, according to announced plans, to supervise exploration of oil resources in the Dominican Republic, where the Skelly organization and CLEM S. CLARK have a concession covering 500,000 acres. Mr. Clark, an independent operator of Shreveport, La., is a son of the late Cal Clark, former president of the Standard Oil Company of Louisiana.

W. S. W. KEW, chief geologist for the Standard Oil Company in the Los Angeles Basin, who left early in October to take an extended trip through the East, is expected to return this week. He attended the midyear meeting of the American Association of Petroleum Geologists in Pittsburgh, Pa. During his absence from Los Angeles he was elected president of the Pacific Coast section of the association.

J. C. MORRELL, Universal Oil Products Company, Chicago, was elected chairman of the petroleum division of the American Chemical Society for the 1937-38 term. Others chosen follow: Vice chairman, PER K. FROLICH, Standard Oil Development Company, Elizabeth, N. J.; secretary, C. R. WAGNER, Pure Oil Company, Chicago; executive committee, FRANK W. HALL, the Texas Company, New York; J. K. ROBERTS, Standard Oil Company of Indiana, Whiting, Ind.

WINFIELD GIVENS, now manager of the Illinois division office of the Sun Oil Company, was formerly in the company's land office in Philadelphia. His aid will be KIRBY SMITH, JR., formerly of Washington, D. C.

GLEN RUBY, consulting geologist associated with R. B. MORAN, of Los Angeles, Calif., has left for Buenos Aires, Argentina, where he will be engaged in geological work for the Argentine government for a year or more.

DAVID DONOGHUE, Fort Worth, Tex., consulting geologist and engineer, was in New York last week and while there he visited, among others, WALLACE PRATT, director of the Standard Oil Company of New Jersey; JOHN LOVEJOY, president of the Seaboard Oil Company of Delaware, and H. C. BISHOP, vice president and director of the Crystal Oil Refining Corporation.

L. W. WICKES, independent producer of Los Angeles, Calif., was visiting Gulf Coast oil fields the past week.

H. J. DeARMAN, independent producer and drilling contractor of Houston, Tex., is in Southwest Texas hunting deer.

WALTER P. WILSON, geologist, left the United States aboard the S.S. Hamburg on his way to Iran, where he will be engaged in geological work for the Amiranian Oil Company. His address will be 10 Khiaban Nosrat, Teheran, Iran.

CHESTER W. WASHBURNE has returned from field work in Venezuela and has moved his office from 149 Broadway to 50 Church Street, New York, where he will handle also the consulting work of FREDERICK G. CLAPP during the absence of Mr. Clapp in the Near East.

M. A. BREWSTER, vice president and treasurer of the Pennzoil Company; B. H. WATERBURY, superintendent of the Atlantic Refining Company, and LEE R. FORKER, purchasing agent of the Quaker State Oil Refining Corporation, were elected directors of the Wanango Country Club, Oil City, Pa., last week.

CHARLES B. BUERGER, vice president in charge of refining, and WILLIAM A. SLATER, general manager of the refining department of the Gulf Oil Corporation, with headquarters in Pittsburgh, Pa., were hosts at an informal party given at the company's plant in Port Arthur, Tex., last week. The party was attended by officials of operating companies. A luncheon in the company plant was followed by a golf tournament and dinner at the Country Club.

He Has Made Fast Time

A glance at the record shows K. A. Covell, assistant production manager of the Pure Oil Company's southwestern division, has made fast time in the 35 years of his life thus far logged. Mr. Covell was born in Corvallis, seat of Oregon State College, and all his schooldays were passed there. On receiving his bachelor of science degree in mechanical engineering in 1924 he became one of the Empire Gas & Fuel Company's junior engineers. Four months as a roustabout at Electra, Tex., came first. Then the young man was transferred to Bartlesville, Okla., headquarters of the company. In January, 1925, he was placed in the production department of the Indian Territory Illuminating Oil Company, an Empire subsidiary. He spent six months in 1927 as an engineer at Seminole on tank-building and pipe-line laying jobs. In 1929 he was advanced to chief production engineer and he was active in his company's part in the development of the Oklahoma City field.

K. A. COVELL

Mr. Covell joined the Pure Oil Company in 1932 as assistant production engineer, stationed at the Chicago headquarters. After three years at the main office in that city he was made division engineer, with his office in Tulsa. In 1936 he was promoted to his present post. Golf is his principal fun, and he plays a good game of tennis. He was married in 1925 and has three children.

R. C. POWLESS, with the Tide Water Associated Oil Company in Tulsa, has been transferred to San Antonio, Tex., as geological scout.

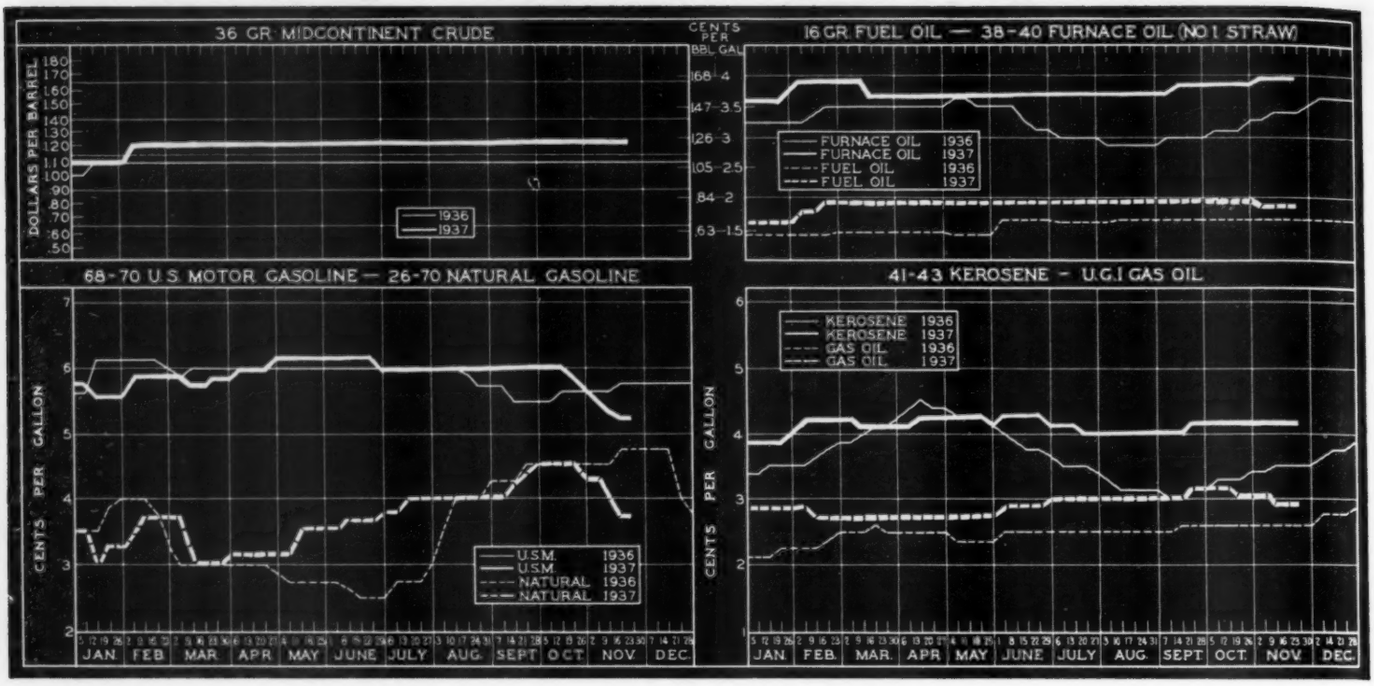
S. F. SHAW, consulting engineer for the Westgate Oil Company, has returned to Oklahoma City from California where he made investigations in the Wilmington field.

HENRY D. WILDE, of Houston, Tex., manager of the technical department of the Humble Oil & Refining Company, has been elected a director of the American Institute of Mining and Metallurgical Engineers.

WILLIAM GANLEY, the first office secretary of the Chicago Oil Men's Club, has become associated with the Falley Petroleum Company, Chicago. Recently he had been connected with Valvoline Oil Company's Chicago office.

AMOS L. BEATTY, of New York, former president and secretary of the board of the Texas Company, is planning to reside in Houston, Tex., following the conclusion of the Madison trial. He will manage his own company, Amos L. Beatty & Company, Inc., which recently opened offices in the Gulf Building.

THOMAS H. MURPHY, of Greeley, Neb., has been made president of the Nebraska Petroleum Marketers, Inc., jobbing organization, to succeed O. D. COREY, who resigned. The board of directors announced abandonment of all group or cooperative buying and appointed the following executive committee: J. W. TRENCHARD, of Cambridge; PAUL H. ENGLER, of Bassett; C. C. ROSENBERG, Lexington. The president also is a member of the committee.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

One Thing Group 3 Refiner Can Give Thanks for: Gasoline Is No Lower

By T. F. SMILEY

Tankcar gasoline quotations in the Group 3 area didn't drop any lower in the past week, giving refiners that much anyway to count among their blessings on Thanksgiving Day. Here and there was one who had chirked up a bit, drawn his chin out of his shirt-front and ventured an opinion that the market seemed to get getting a little firmer. An increasing number too had joined the take-it-or-leave-it division, refusing flatly to accept anything less than the ruling price for their gasoline.

One Source of Comfort

One sales manager extracted comfort from the axiom, "Every day of prices going down brings you one day nearer to prices going up." He and others inclined to the view that influences now at work will keep the market from sinking to lower levels. For one thing, it was pointed out that tankcar quotations have reached a depth so absurdly out of line with the cost of manufacture that only a refiner who finds himself in dire straits will even consider making concessions. As a result, the refiner who firmly declines to shade his price stands virtually as good a chance of getting business as he would if he resorted to underselling.

Many plants have been shut down, and others are scheduled to close. Various Oklahoma refiners are reported to have made sharp reductions in their takings of crude from pipe line companies. This is at least presumptive evidence that such refiners are planning similar reductions in their runs to stills. One large Mid-Continent refiner who has his own production calculates he is losing 35 cents on every barrel of oil he processes. He is convinced it would be a sound business move for him to close his plant and sell his crude. He is planning to do that.

One of the largest refiners in the East Texas area apparently reasons about the same way, for he is trying to dispose of his crude production, after which he will shut down his plant. If he carries out his plan—and there is said to be strong likelihood that he will—it will have a marked effect on the situation in East Texas, where burdensome gasoline stocks are looking for outlets. Only seven East Texas refineries were said to be operating on federal-tender crude this week. A half-dozen others were running on state-tender crude, disposing of their product to trucks exclusively. The dropping out of one big refinery would be likely to bring output of the area closely into balance with demand. Almost all East Texas gasoline is handled through brokers.

A few necessitous sales of low-octane motor fuel at an eighth under the prevailing price were reported from North Texas, but the quantity moved was too small to make the transactions representative of the market and the difficulties of bargain hunters were increasing daily.

Cold weather which overspread wide areas in the past week had the effect of slowing up gasoline consumption somewhat, but added vigor to the demand for the heating oils. Jobbers' stocks are not overlarge, and many orders are accompanied by appeals for prompt shipment.

Kerosene Vigorous

Kerosene was sharing in the lively market for heating oils. The 40-42 tractor fuel, much used as a range oil, was reported tight. East Texas kerosene, 41-43 grade, was moving in large volume to the Gulf for export shipment at 4⅛ cents f.o.b. refinery. Decline in cracking operations has resulted in decreased call for U.G.I. gas oil.

The natural gasoline market was standing still, with last week's quotations unchanged. A slightly better tone was observable. Jobbers were buying gingerly, apparently fearing that prices which had lost three-quarters of a cent in a month might possibly go still lower. No unwieldy stocks were reported, and with a settled market for refinery gasoline an upturn in buying was predicted.

Refined Oil Market Barometer

Continued cold weather in the northern and eastern states during the past week caused demand for heating oils to be sharply increased and brought out numerous inquiries. Gasoline, after several weeks of falling off, was unchanged in price although demand was visibly affected by cold weather. Lubricants continued weak, but naturals were firmer.

MID-CONTINENT. Gasoline steady. Kerosene and heating oils vigorous. Naturals firm.

EAST COAST. Gasoline softer. Kerosene and light fuel oils stronger.

GULF COAST. General market dull. Burning oils continue strong.

CALIFORNIA. Diesel, gas oil and heating oils firm. Gasoline steady.

PENNSYLVANIA. High octane gasoline easier. Kerosene strong. Lubricants weak.

CHICAGO. Gasoline improved. Kerosene quiet. Heating oils tight.

Burning Oils Advanced on East Coast While Gasoline Market Is Softer

By H. STANLEY NORMAN

NEW YORK, Nov. 23.—The long awaited winter temperature needed to develop a winter snap in light fuel oil and kerosene trading reached the North Atlantic coastal section last week. The mid-Atlantic and North Atlantic states experienced their first near freezing temperatures of the winter and the call for fuel oil developed immediately.

Trading in both the tankcar and tank-wagon markets for fuel oil and kerosene immediately reflected the drop in temperature. It was far more noticeable in the New England states and in the overlap territory between the Middle West and New England in the vicinity of the Great Lakes where subfreezing weather has made several early winter visits.

The converse was true of gasoline which was reported somewhat softer on the Gulf Coast, at inland Pennsylvania refining points and in the general North Atlantic tankcar market. Tank-wagon gasoline prices were also softer in much of the Standard Oil Co. of New Jersey territory where tankcar prices were lowered three-quarters of a cent per gallon at the end of the preceding week. In New York harbor territory, spot tankcar gasoline of 65-octane grade was reported selling at 7¼ to 7½ cents per gallon. There were reports of an occasional trade at 7 to 7⅛ cents per gallon but it appeared that a bulk of the open tankcar market business was done at about 7¼ cents.

The kerosene market of 6¼ to 6.3 cents per gallon for tankcar business with barge deliveries an eighth of a cent per gallon less appeared to be on firmer foundation than at any time for the past three or four weeks. During the slack trading in kerosene which follows closely the temperature fluctuations this season of the year, the prices were mostly unchanged, but there was considerable business closed at fractionally lower figures. For the past two weeks most of the underselling has been absent, according to close observers of the market.

Kerosene remained firm along with other light fuel oils on the Gulf Coast last week. There were several inquiries in the market for light fuel oil, but no cargoes were reported sold. Several making inquiry reported that suppliers sought to load part cargoes of light fuel oil with remainder devoted to gasoline. There was no material slackening in the movement of light fuel oil from the Gulf Coast, but most of the business was in response to shipping instructions from contract customers both in this country and abroad. In the absence of coastwise or export business in gasoline, however, prices were reported somewhat lower. Some traders reported that 64-66 375 endpoint gasoline for export lifting might be purchased for 5⅝ cents per gallon, but inquiries in several directions failed to confirm willingness of refiners to supply a cargo for the figure mentioned. It was also reported that business on 65-octane motor fuel for coastwise shipment might be done on a basis of 5⅞ cents per gallon, but in the absence of actual trading at this figure, the report was considered in conflicting lights.

Heavy fuel oil business both for export and coastwise movement remained unchanged. Bunker C fuel oil appeared in reasonably strong demand at the unchanged price of $1.25 per barrel at North Atlantic ports while 95 cents per barrel was quoted at most Gulf Coast terminals. There was indication, however, that bids of 92½ cents per barrel, or possibly less in a few directions, might bring out the heavier grades of fuel oil. Diminished demand by heavy industry in the northern sections, particularly in the steel manufacturing centers, continues to exert a bearish influence on heavy fuel oil.

Kerosene and light fuel oil were also the market leaders in the western Pennsylvania refining district. Kerosene was reported selling abreast of the area's producing capacity at 5½ to 5¾ cents per gallon while light fuel oil sold up one-half of a cent per gallon at 5⅛ cents in part of the territory. In the lower Pennsylvania refining district, light fuel oil was still available for 5 cents per gallon or slightly less, but there also the effect of expanded demand was exerted. Throughout the gasoline and heavy fuel oil market could be detected the hesitancy of buyers to fill their requirements in light of the scramble to cut back crude oil production. In some quarters the order of the Texas Railroad Commission closing all East Texas wells for the next four consecutive Sundays had the opposite effect of building confidence. In some quarters the reaction was that conditions must be near a breaking point or at least were on dangerous ground. In light of the general attitude of caution some buyers were holding out of the market just as long as possible to see which way the trend may bend. Sifted down, however, the attitude of caution is not so nearly related to the oil industry and its statistical position as to the stock market and business in general.

In view of seasonal conditions, most refiners and marketing organizations report demand for motor fuel at satisfactory levels. There is no break in the rate of consumption other than that normally expected with November temperatures and weather conditions. In general, the consumption appears to be holding its increase of 10 per cent above 1936, even though rain and colder weather the past 10 days have had their customery reaction on automobile operation. The slackened demand from industry in general probably is more apparent in the Pennsylvania cylinder oil market than in the heavy fuel bracket. The 600 steam refined filterable stock drifted into lower ground and high flash material was reported selling off as much as a cent per gallon from the preceding week's quotations. Bright stock and neutral oils remained at about the same levels as prevailed the preceding week.

Licensing of service stations and grading of gasoline came in for its first official review in New York state last week when the joint legislative investigation committee headed by Assemblyman Harold B. Ehrlich of Buffalo held a hearing in New York.

Representatives of major oil companies and others voiced their opposition to the proposed code saying, among other things, that adequate supervision would simply add to the motorist's motor fuel bill and would serve no good cause.

Dr. L. C. Beard, Jr., assistant director of the Socony-Vacuum Oil Co.'s research department, and secretary of the American Society for Testing Materials, contended that the proposed state regulation would be superfluous since the competitive conditions existing between companies and their adequate equipment for testing is in itself the strongest kind of policing power. Assemblyman Ehrlich insisted, however, that new standards are required to take the place of New York state's obsolete grading regu-

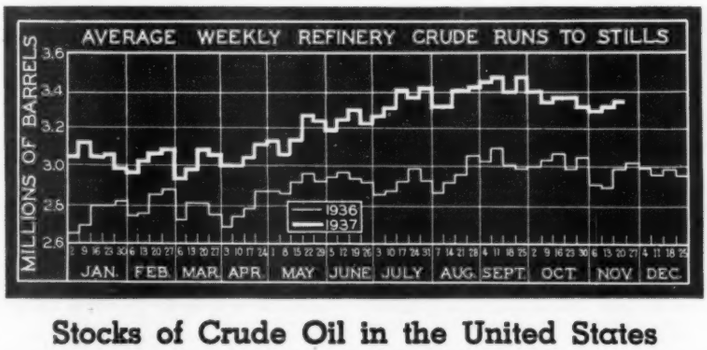
(Continued on Page 122)

A. P. I. Weekly Refinery Statistics

Week Ending November 20, 1937

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	547,000	17,446,000	14,852,000
Appalachian	88.4	118,000	2,688,000	1,004,000
Indiana, Illinois, Kentucky	92.4	435,000	9,761,000	7,461,000
Oklahoma, Kansas, Missouri	84.7	274,000	6,069,000	3,969,000
Inland Texas	56.6	155,000	2,095,000	1,937,000
Texas Gulf	95.7	759,000	9,544,000	12,049,000
Louisiana Gulf	96.9	141,000	1,911,000	3,524,000
North Louisiana and Arkansas	63.7	56,000	391,000	488,000
Rocky Mountains	69.7	48,000	1,366,000	625,000
California	90.9	514,000	12,690,000	72,032,000
Total reported	89.0	3,047,000	63,961,000	117,941,000
Estimated unreported	.....	318,000	3,700,000	3,250,000
*Estimated total	.....	3,365,000	67,661,000	121,191,000
*Estimated total previous week	.....	3,335,000	67,035,000	121,012,000
*November 21, 1936	.....	2,995,000	56,670,000	111,762,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending November 13, 1937	305,608,000 barrels
Week ending November 6, 1937	307,224,000 barrels
Week ending November 14, 1936	288,618,000 barrels

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of November 23, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Chicago, Ill.	15 3	13 3	4 0	10 1
Decatur	15 3	13 8	4 0	10 1
Joliet	15 3	13 8	4 0	10 1
Peoria	15 3	13 8	4 0	10 1
Quincy	15 1	13 6	4 0	9 9
Davenport, Ia.	15 3	13 8	4 0	‡13 1
Des Moines	15 1	13 6	4 0	‡12 9
Mason City	15 4	13 9	4 0	‡13 3
Sioux City	15 3	13 8	4 0	‡13 1
Duluth, Minn.	17 1	15 6	5 0	10 9
Mankato	16 7	15 2	5 0	10 5
Minneapolis	16 7	15 2	5 0	10 5
Lacrosse, Wis.	16 7	15 2	5 0	10 5
Green Bay	17 0	15 5	5 0	10 8
Milwaukee	16 5	15 0	5 0	10 4
Detroit, Mich.	15 1	13 6	4 0	9 8
Grand Rapids	16 3	14 8	4 0	10 9
Saginaw	16 1	14 6	4 0	8 5
Evansville, Ind.	16 8	15 3	5 0	†10 6
Indianapolis	16 9	15 4	5 0	†10 8
South Bend	17 2	15 7	5 0	†9 6
Fargo, N. Dak.	16 7	15 2	4 0	11 5
Minot	17 9	16 4	4 0	12 7
Huron, S. Dak.	17 1	15 6	5 0	10 9
Kans. City, Mo.*	14 6	13 1	4 0	8 0
St. Louis*	14 9	13 4	4 0	9 8
St. Joseph	14 6	12 4	4 0	8 5
Wichita, Kans.	14 1	12 4	4 0	8 0

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Iowa kerosene prices include 3-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Atl'tic City, N. J.	12 75	11 25	4 0	9 0
Newark	12 75	11 25	4 0	9 0
Annapolis, Md.	14 85	13 26	5 0	9 5
Baltimore	14 25	12 75	5 0	9 0
Cumberland	16 65	14 15	5 0	10 0
Wash'g'n, D. C.	12 5	11 0	3 0	9 5
Danville, Va.	17 45	14 95	6 0	12 9
Norfolk	16 25	13 75	6 0	11 5
Petersburg	16 55	14 05	6 0	11 7
Richmond	16 55	14 05	6 0	11 7
Roanoke	17 75	15 25	6 0	12 9
Charles'n, W. V.	17 05	14 55	6 0	12 6
Parkersburg	16 35	13 85	6 0	11 2
Wheeling	16 25	14 75	6 0	12 2
Charlotte, N. C.	18 65	16 15	7 0	12 6
Hickory	19 15	16 65	7 0	13 0
Mt. Airy	18 95	16 45	7 0	12 8
Raleigh	18 25	15 75	7 0	12 1
Salisbury	18 75	16 25	7 0	12 7
Charleston, S. C.	17 25	14 75	7 0	11 1
Columbia	18 25	15 75	7 0	12 1
Spartanburg	18 95	16 45	7 0	12 9

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5-cent per gallon

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank-wag.
Atlanta, Ga.	21 0	18 0	7 0	*†12 0
Augusta	21 0	18 0	7 0	*14 0
Macon	21 5	18 5	7 0	*14 5
Savannah	19 0	16 0	7 0	*12 0
Birm'ham, Ala.	22 0	19 0	8 0	12 0
Mobile	22 0	19 0	9 0	11 0
Montgomery	22 0	19 0	9 0	14 5
Jackson, Miss.	20 0	17 0	7 0	*13 0
Vicksburg	20 0	17 0	7 0	*13 0
Jacksonville, Fla.	20 0	17 0	8 0	†10 0
Miami	20 5	17 5	8 0	†12 5
Pensacola	22 0	19 0	9 0	12 0
Tampa	19 0	16 0	8 0	10 5
Lexington, Ky.	19 5	16 5	6 0	11 0
Covington	19 0	16 0	6 0	11 0
Louisville	19 0	16 0	6 0	10 5
Paducah	19 5	16 5	6 0	10 0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Denver, Colo.	16 5	5 0	11 5
Grand Junction	19 0	5 0	15 0
Pueblo	16 0	5 0	10 5
Casper, Wyo.	17 0	5 0	11 5
Cheyenne	17 0	5 0	13 0
Butte, Mont.	19 0	6 0	15 5
Billings	19 5	6 0	15 5
Helena	19 5	6 0	15 5
Great Falls	19 5	6 0	15 5
Salt Lake City, Utah	19 5	5 0	16 0
Twin Falls, Ida.	21 5	6 0	18 0
Boise	21 5	6 0	18 0
Albuquerque, N. M.	17 5	6 5	12 0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank wag. con'r.	Gasoline Di-vided dlr.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	16 5	15 5	5 0	*13 5

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Albany, N. Y.	14 5	13 0	5 0	9.0
*Met. N. Y.:				
Manh't'n, Br'nx	14 0	13 0	5 0	9.0
Staten Island	14 5	13 0	5 0	9 0
Q'ns. & Brklyn	14 0	13 0	5 0	9 0
Buffalo	15 05	13 54	5 0	8 5
Rochester	15 0	13 67	5 0	8 5
Syracuse	15 0	14 7	5 0	9.5
Boston, Mass.	11 75	13 0	4 0	8 5
Portland, Me.	13 0	14 8	5 0	8 75
Manch'ter, N. H.	15 8	13 5	5 0	9 5
Burlington, Vt.	15 4	13 4	5 0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
San Francisco	17 5	18 5	4 0	11 5
Los Angeles	17 0	18 0	4 0	9 0
Fresno, Calif.	18 5	19 5	4 0	12 0
Phoenix, Ariz.	21 0	22 0	6 0	‡16 0
Reno, Nev.	20 0	21 0	5 0	13 0
Portland, Ore.	20 0	21 0	6 0	13 5
Seattle, Wash.	20 0	21 0	6 0	13 5
Spokane	23 0	24 0	6 0	16 5
Tacoma	20 0	21 0	6 0	13 5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	17 7	16 2	6 0	10 5
McCook	18 1	14 1	6 0	10 1
Norfolk	18 1	16 6	6 0	10 9
North Platte	18 5	17 0	6 0	11 3
Scotts Bluff	19 2	16 0	6 0	12 0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank-wag.
N. Orleans, La.	19 75	17 25	*10 0	†13 0
Baton Rouge	17 75	15 25	8 0	12 0
Alexandria	18 25	15 75	8 0	12 0
Lafayette	18 75	16 25	8 0	13 0
Lake Charles	18 75	16 25	8 0	12 5
Shreveport	17 25	14 75	8 0	9 5
Kn'xv'le, Tenn.	20 75	18 25	8 0	14 0
Memphis	18 75	16 25	8 0	12 0
Chattanooga	20 25	17 75	8 0	13 5
Nashville	19 75	17 25	8 0	11 5
Bristol	19 50	18 25	8 0	14 5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1 cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	14 0	12 5	5 0	10 5
Pittsburgh	15 5	13 5	5 0	11 0
Allentown	15 0	13 5	5 0	11 0
Erie	14 5	13 0	5 0	10 0
Scranton	15 0	13 5	5 0	11 0
Altoona	15 5	13 5	5 0	11 0
Dover, Del.	14 5	....	5 0	11 0
Wilmington	13 5	....	5 0	11 0
Spring'd, Mass.	13 3	....	4 0	9.0
Worcester	14 3	....	4 0	9 0
Hartford, Conn.	14 1	....	4 0	9 0
New Haven	14 0	....	4 0	9.0
Providence, R. I.	14 0	....	4.0	8.5

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14 5	5 0	7 0
Oklahoma City	14 0	5 0	8 0
Tulsa	14 0	5 0	6 0
Ft. Smith, Ark.	15 5	5 0	8 0
Little Rock	17 25	7 5	9 5
Texarkana	15 5	5 0	8 5

Texas

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Dallas, Tex.	14 0	18 5	5 0	8 0
Fort Worth	14 0	18 0	5 0	8 0
Houston	14 5	19 0	5 0	8 0
San Antonio	14 5	18 5	5 0	8 0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N.S.	24 0	8 0	18 5
St. John, N.B.	24 0	8 0	18 5
Montreal, Que.	21 0	6 0	17 5
Toronto, Ont.	22 0	6 0	17 0
Hamilton, Ont.	22 0	6 0	17 0
Winnipeg, Man.	27 5	7 0	20 7
Brandon, Man.	29 8	7 0	22 3
Regina, Sask.	29 5	7 0	22 0
Saskatoon, Sask.	32 3	7 0	24 8
Edmonton, Alta.	29 5	7 0	24 2
Calgary, Alta.	27 0	7 0	21 5
Vancouver, B.C.	23 0	7 0	23 0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Standard Oil Co. (Indiana) November 17 advanced tank-wagon and dealer gasoline .1 cent throughout its territory except in Milwaukee, Detroit, Indianapolis, Kansas City, St. Louis, St. Joseph and Wichita prices were unchanged; November 4 reduced tank-wagon kerosene .5 cent in St. Joseph.

Standard Oil Co. of Nebraska November 17 advanced tank-wagon and dealer gasoline and tank-wagon kerosene .1 cent at all points.

Continental Oil Co. November 16 reduced dealer gasoline .75 cent in Little Rock; November 13 reduced dealer gasoline 1.5 cents in Billings, Helena and Great Falls; November 22 reduced dealer gasoline .5 cent in Butte, Billings, Helena and Great Falls.

Credit Men Elect

The Petroleum Refiners Division, National Association of Credit Men, has elected the following officers and directors for the ensuing year: Chairman, E. R. Siler, Socony-Vacuum Oil Co., Inc., St. Louis, Mo.; vice chairman, Webb R. Charles, Globe Oil & Refining Co., Wichita, Kans. Members of the board: H. L. Blankenship, Barnsdall Refining Corp., Tulsa; H. E. Butcher, Cities Service Oil Co., Chicago, Ill.; B. W. Atwood, Shell-Union Oil Corp., New York, N. Y.; R. C. Ward, Sun Oil Co., Toledo, Ohio; J. M. Judson, Sinclair Refining Co.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of November 23, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below (3d gr.)	.04⅛	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅜
60-62 400 grades:		
62 oct. and below (3d gr.)	.04⅛	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅜
64-66 375	.04⅞	.05
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅛	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅜
60-62 400	.04½	.04⅝
64-66 375	.04⅞	.05

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.04¾	.05
63-66 octane	.05	.05¼
67-69 octane	.05⅜	.05⅝
70-72 octane (regular)	.05¾	.05⅞

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04¾	.05⅛
63-66 octane	.05	.05¼
67-69 octane	.05⅜	.05⅝
70-72 octane (regular)	.05¾	.05⅞

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅛	.04⅜
63-66 octane	.04½	.04¾
67-69 octane	.04⅞	.05⅛
70-72 octane (regular)	.05¼	.05⅝
60-62 400 grades:		
62 octane and below	.04⅛	.04⅜
63-66 octane	.04½	.04¾
67-69 octane	.04⅞	.05⅛
70-72 octane (regular)	.05¼	.05½
64-66 375	.04⅞	.05⅛
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.05	.05¼
60-64.9 octane	.06⅞	.07⅛
65-70 octane	.07	.07¼
64-66 390	.05¾	.05⅞
68-70 350	.05⅞	.06

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07½	.08½
58-60 400, 65 oct. and higher	.08¼	.09¼

EAST COAST (Domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)	.06¼	.06½
Baltimore	.06	.06¼
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)	.07¼	.07⅜
Philadelphia	.07¼	.07½
Boston	.07⅜	.08¼
Baltimore	.07¼	.07½
Charleston, S. C.	.07¼	.07⅜
U. S. Motor, 65 and above:		
*New York (Bayonne)	.07½	.08
Philadelphia	.07¼	.07¾
Boston	.07¾	.08¼
Baltimore	.07½	.08
Charleston, S. C.	.07¾	.08¼

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05⅜	.05½
60-64.9		.05⅝
65 octane and higher		.05¾

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.05¼	.05½
52-54 450 (blending)	.05¼	.05½
54-56 450 (blending)	.05¼	.05½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03⅜
Grade 18-55	.04½

NORTH TEXAS—

Grade 26-70	.03⅜
Grade 18-55	.04½

CALIFORNIA—

75-85 375-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.04⅝	.04¾

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04⅛	.04¼
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04½
46-48 gr., 210-320 i.b.p., 480 max., e.p.	.04¾	.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04¼
42-44	.04¼	.04½

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04½

PENNSYLVANIA (inland refineries)—

45	.05½	.05⅝
46	.05⅝	.05¾
47	.05¾	.05⅞

CHICAGO (Based on Group 3)—

41-43	.04	.04¼
42-44	.04¼	.04½

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05¼	.06¼

NEW YORK (Bayonne, N. J.)—

41-43	.06 3/10

***GULF COAST (domestic)—**

41-43	.05¼

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.04	.04⅛
No. 1 straw, 38-40		.03⅞
No. 2 straw, 32-36	.03⅝	.03⅞
No. 2 dark, 32-36	.03½	.03⅝
No. 3 zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.04	.04⅛
No. 1 straw, 38-40	.03¾	.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03¾

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-40	.04	.04⅛
No. 1 straw, 38-40	.03¾	.03⅞
No. 2 straw, 32-36	.03⅝	.03¾
No. 2 dark, 32-36	.03½	.03⅝
No. 3, zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.06 3/10
*No. 2	.05½
*No. 4	.05¼

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.07½	1.12½
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.85	.90
Below 18 fuel oil, industrial	.75	.80

NORTH TEXAS—

U.G.I. gas oil	.03	.03⅛
No. 4, low cold test, 24-28	1.07½	1.12½
No. 5, low cold test, 18-22	.82½	.87½
Below 18 fuel oil, industrial	.75	.80

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.03	.03⅛
No. 4, low cold test, 24-28	1.07½	1.12½
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.82½	.90
No. 5, 15 and above (18-22)	.80	.85
No. 6, low cold test, 10-16	.75	.82½

PENNSYLVANIA (inland refineries)—

36-40	.04¾	.05

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.50	1.70
24 plus diesel, per bbl.	1.50	1.75
24 plus diesel (bunkers)	1.60	1.80
12-16 (bunkers at tidewater)	1.05	1.10
10-16 (cargo lots)	.90	1.10
12-17 (tankcars)	.95	1.10
10-17 (high sulfur)	.70	1.00
San Joaquin Valley:		
10-18 (tankcars)	.65	1.00
24 plus diesel, per bbl.	1.50	1.70
San Francisco:		
24 plus diesel, per bbl.	1.60	1.70
24 plus diesel (bunkers)	1.60	1.70
10-16 (bunkers)	1.10	1.15

GULF COAST—

28-30 gas oil	.04½	.04⅝
28-30 diesel (bunkers)		1.90
Bunkers (bulk cargoes)		.85
Bunker C (bunkers)		1.05

NEW YORK (Bayonne N. J.)—

27 plus, gas oil	.05	.05¼
28-30 diesel (lighterage 6¼c per bbl.)		2.20
28-30 diesel (tankcars)		.05¼
Bunker C (to ocean-going ships in N. Y. harbor)		1.25
Industrial fuel (tankcars)	.04½	.04¾

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.20
150-160 D, 0-10		.17
150-160 D, 15-25		.16
150-160 E, 15-25		.15½
100-110 D, 0-10		.15½
Steam refined:		
631 green (treated)		.14½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.19	.20
15 pour test	.18	.19
20 pour test	.17	.18
25 pour test	.16	.17
Steam refined:		
600	.08	.08½
650	.11½	.12
600 Pennsylvania flash	.13	.13½
630 flash	.17	.17½
600 Warren E filtered	.13	.13½

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.19	.19½
10 pour test	.18	.18½
15 pour test	.17½	.18
25 pour test	.16½	.17½
180 vis. at 70° F., 3 color:		
25 pour test	.19	.19½
200 vis. at 70° F., 3 color:		
Zero pour test	.23	.23½
10 pour test	.22	.22½
15 pour test	.21½	.22
25 pour test	.20½	.21

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale		.03

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0295	.0300
124-126 (a.m.p.) w.c. scale	.0295	.0300

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0295	.0300
124-126 (a.m.p.) y.s.	.0265	.0280
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05⅜	.05½
60-62 400	.05⅝	.05½
61-63 390		.05⅝
64-66 375		.05¾

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¾	.06
65-69 octane		.06¼
Above 69 octane		.06½

KEROSENE

GULF COAST—

41-43 prime white	.05⅛
41-43 water white	.05¼
44 water white	.05⅝

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.21½	.22
600 S.R. unfiltered	.16½	.17
630 S.R. unfiltered	.21	.21½
600 flash, S.R.	.21½	.22
630 flash, S.R.	.25½	.26
Bright Stocks:		
8 color	.23½	.24
6½ plus color in dilution	.23	.23½

NEUTRAL OIL

200-3 color	.30	.30½
150-3 color	.25½	.26

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude Scale:		
124-126 w.s.	.0295	.0300
124-126 y.s.	.0265	.0280

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	.91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Jan. 1, 1937)*	.67
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.70
Hogback, New Mex. (Jan. 1, 1937)*	1.21
Pondera, Mont. (Jan. 26, 1936)*	1.05
Salt Creek Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table)	
Artesia, N. Mex. (Jan. 28, 1937)‡	.92
Maljamar, N. Mex. (Jan. 28, 1937)	.92
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.	.97
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Oct. 25, 1937) gr. scale $1.05 below 35°; $1.30 above 40°.	
Cut Bank, Mont. (Oct. 25, 1937), (posted by Northwest Refining Co.)	1.10
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.25
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (July 23, 1937)*	1.27
West Branch, Mich. (July 22, 1937)	1.09
Buckeye (July 23, 1937)	1.24¼
Arenac, Mich (July 1, 1937)	1.21
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 4, 1937)	1.12

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Southwest Texas

(January 28, 1937)

Pettus	1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Luling	1.00
Lytton Springs	1.12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$.90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90

Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective October 12, 1937)

Bradford, Pa.	$2.35
Allegany, N. Y.	2.35

SOUTH PENN OIL CO.
(Effective October 12, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.35
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.05
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.00
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.85
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective November 19, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2.30
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.29
Includes Tidioute district.	
Group C	2.28
Includes Turkey and Tidioute districts.	
Group D	2.27
Includes Bear Creek and Porkey districts.	
Group E	2.25
Includes Eideneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective October 12, 1937)

Cabin Creek, W. Va.	2.00
Bradford Hollow, W. Va.	2.00
Kelly Creek, W. Va.	2.00

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(September 1, 1937, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.36
Discolored naphtha and crude oil 40-40.9 gravity	1.36
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.84

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Mexico

Heavy Mexican crude	$.95

*In U. S. currency, f.o.b. ship, based on October spot market transactions.

Crude Oil Price Changes

Effective November 16, 1937, International Pipe Line Co. posted a flat price of $1.10 in the Cut Bank field, changing from a gravity schedule. On the same day it posted a price of 90 cents per bbl. in the Kevin-Sunburst field in Montana, which price was met by the Ohio Oil Co. This was a 15-cent reduction in the price in Kevin-Sunburst and was the second 15-cent cut within a month in that field.

Effective November 19, Pennzoil Co. cut the price of oil it purchases in the Oil City and Titusville and Warren districts in Pennsylvania 5 cents per bbl. making the new prices range from $2.25 to $2.30 per bbl., depending upon the distance of the field from the company's refinery. The company announced that the new prices partially equalized the delivered prices of the various crudes it purchases in Bradford and in West Virginia.

New York Market

(Continued from Page 119)

lations. Representatives of North Carolina, where a new grading law goes into effect December 1, were headed by H. L. Shankle, chief chemist of the department of revenue. Ralph H. Smith, chairman of the Pennsylvania Board of Oil Industry Investigation, also attended the New York meeting and pledged the cooperation of his committee with that of the New York group "so that we may all benefit."

O. P. Cottrell, manager of the technical division of the Texas Co., objected to the grading proposals on the grounds that establishment of minimums by the state would create in the public mind the impression that one gasoline of certain specifications was just as good as any other of similar specifications. This impression, said Mr. Cottrell, would have the highly unsatisfactory result of stifling the competitive spirit among the oil companies, which, he maintained, is responsible for the expensive research work which is constantly improving the quality of motor fuel.

Edwin S. Hall, general counsel of Standard Oil Co. of New Jersey, and Carl Kieser, counsel to Socony-Vacuum, also joined in protesting against the proposed grading saying that performance is the real test of any gasoline and that the motoring public should be left free to burn that motor fuel which satisfies them best without any smoke screens behind which an inferior product might hide.

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Sateuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18										$.90								$.90	
18-18.9										.92								.92	
19-19.9										.94							$.94	.94	
20-20.9										.96	$.95		$.96		$1.01		.96	.96	
21-21.9										.98	.98		.98		1.03		.98	.98	
22-22.9										1.01	1.01		1.00		1.05		1.01	1.01	
23-23.9										1.04	1.04		1.02		1.07		1.04	1.04	
24-24.9										1.07	1.07		1.04		1.09		1.07	1.07	
Bel. 25		$.98			$.90			$.93						$.90					$.88
25-25.9		1.00			.92			.95		1.10	1.10	$.78	1.06	.92	1.11		1.10	1.10	.90
26-26.9		1.02			.94			.97		1.13	1.13	.80	1.08	.94	1.13		1.13	1.13	.92
27-27.9		1.04			.96			.99		1.15	1.15	.82	1.10	.96	1.15		1.15	1.15	.94
28-28.9		1.06			.98			1.01		1.17	1.17	.84	1.12	.98	1.17		1.17	1.17	.96
Bel. 29	$1.06		$.96	$1.03					$1.20										
29-29.9	1.08	1.08	.98	1.05	1.00			1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19		1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02			1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04			1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06			1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08			1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10			1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35						$.96	$.91												
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34		1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36		1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38		1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40		1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42		1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	
40.over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44		1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun Vickers and Wilcox.

Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.

Column 3—All purchasers.

Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.

Columns 5, 6, 7 and 8—All purchasers.

Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tidewater Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)

Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)

Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.

Column 12—All purchasers.

Column 13—All purchasers (effective July 6, 1937).

Column 14—Magnolia Petroleum Co.

Column 15—Humble Oil & Refining Co. (effective July 6, 1937).

Column 16—Humble Oil & Refining Co.

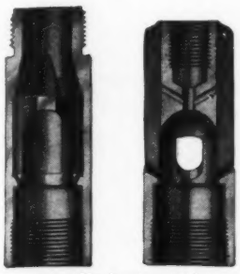
Columns 17 and 18—Shell Petroleum Corp.

Column 19—Tide Water Oil Co.

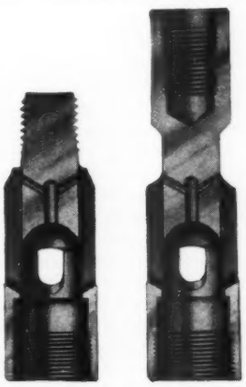
NEW OR IMPROVED EQUIPMENT

Streamlining Raises Efficiency of Oil States Liner Pumps

To minimize friction and increase speed, the Pacific Pump Works has adopted the principle of streamlining in the internal construction of its Oil State insert liner pumps. This increases the flow and volume of fluid through the tubes and mechanism. Streamlined, tapered and beveled shoulders minimize obstructions, lift oil without turbulence and cross currents, eliminate cutting and emulsions. Pacific streamlined pumps are said by the manufacturers to meet the requirements of viscosity and temperatures with greater ease, recovery and constancy.



The illustration indicates how every cage and fitting is able to handle more fluid with less horsepower, less emulsion and prevention of ball-spin. From the shallow operations to the deepest wells these pumps are said to meet every condition efficiently and economically.



The pumps are obtainable in plunger sizes 1 by 72 inches in the smaller stripper pumps, to 2¼ inches by 12 feet in the 3-inch by 15-foot pumps. They are furnished with plungers and liners to meet fluid and operating conditions. Regrinding service on plungers and liners is available through all of the 25 branch or distributors' stores handling Pacific pumps.

Moloy liners, according to the manufacturer, require less power, add life to deep well oil pumps and withstand the most severe conditions of sand, high pressure, abrasion, corrosion and temperature.

Moloy metal is said to permit closer tolerance. Antifriction qualities and extreme toughness due to special alloying give Moloy metal a sorbitic texture of high wearing resistance and tensile strength.

The Mid-Continent Pump Supply Co., Tulsa, Okla., is a subsidiary of the Pacific Pump Works.

Bulletins, Booklets and Other Literature for the Trade

"The Haynes Stellite Library," a booklet just published by the Haynes Stellite Co., Kokomo, Ind., briefly describes 18 Haynes Stellite books, reprints, and folders dealing with hard-facing alloys, cutting tools, and alloys for chemical processing equipment.

A 16-page folder issued by the Foxboro Co., Foxboro, Mass., describes the significance of the seal of certification now attached to every Foxboro instrument. The folder also contains illustrations of more than 20 instruments representative of the entire line.

Rhoads Tannate leather belting is the subject of an 8-page bulletin from J. E. Rhoads & Sons, Wilmington, Del.

Arc welding with the new 40-volt simplified arc welder is the subject of a 24-page illustrated booklet obtainable from the Hobart Brothers Co., Troy, Ohio.

"Automatic Drainage for Natural Gas Pipe Lines" is the title of a bulletin mailed on application by the Armstrong Machine Works, Three Rivers, Mich.

The Wheatley Pumper, published by Wheatley Bros. Pump & Valve Manufacturers, Tulsa, is stirring new interest by offering cash prizes for the "biggest lie."

The American Brass Co., Waterbury, Conn., has prepared a folder picturing and describing a way to install an exhaust line so that it will be permanent and trouble-free.

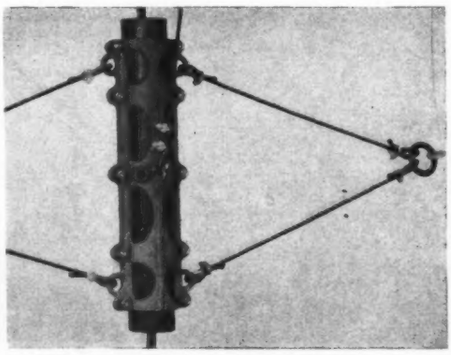
A revised edition of Benjamin catalog No. 26 includes data on late improvements in lighting, including industrial lighting, flood-lighting and signals.

A 14-page booklet prepared by the General Cable Corp., 420 Lexington Avenue, New York, is devoted to Trenchlay, a nonmetallic underground cable for direct earth installation.

Patterson-Ballagh's Wire-Line Guide Is Made Sparkproof

"No sparks" is an important feature of the new improved Patterson-Ballagh wire-line guide. Utilizing at points of friction the same tough rubber used in the manufacture of Patterson-Ballagh protectors, the guide is made spark-proof no matter how fast the line travels or in what position the guide is set.

This product permits uniform spooling of the



wire line, eliminates whipping and increases the life of the line. It can be easily installed in the derrick. It consists of a tough rubber retaining-sleeve through which the wire line runs, and is housed in a strong metal body, held in taut position by side lines. Replacements can be made without lowering the guide or disturbing the line.

Announce Personnel Changes in Petroleum Rectifying Co.

Several changes in the personnel of the Petroleum Rectifying Co. of California are announced

H. C. Eddy *W. K. Mellon*

from the general offices of the company in Los Angeles by T. N. St. Hill, president.

H. C. Eddy, chief engineer, who has a record of 24 years of continuous service, has been elected a vice president and director of the company. As

William Woelflin *C. H. M. Roberts*

vice president Mr. Eddy will be in full charge of all engineering activities.

W. K. Mellon, California district manager, with 18 years of continuous service to his credit, also has been elected a vice president, in which capacity he will have charge of sales and service in all territories.

William Woelflin, who has served as research engineer in the company's laboratory in Long Beach, Calif., for the past six years, has been appointed district engineer for California, with headquarters in Long Beach.

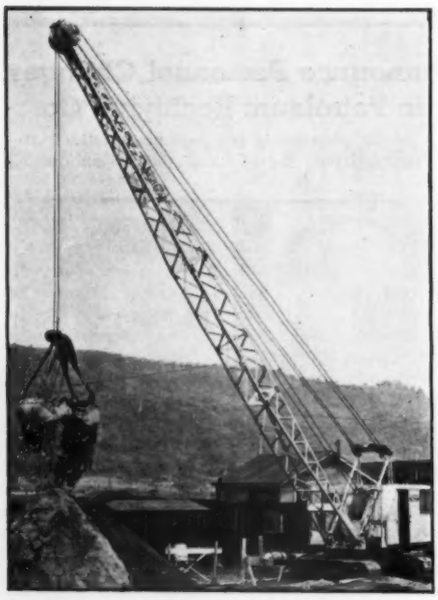
C. H. M. Roberts, who has been engaged in special research work for the company for 14 years, has been appointed research engineer in charge of the laboratory and research department in Long Beach.

Dresser-Clark Appoints Norton

Charles E. Norton has been made Chicago representative for the S. R. Dresser Manufacturing Co., of Bradford, Pa., and its subsidiary, Clark Bros. Co., of Olean, N. Y. Dresser manufactures flexible pipe couplings and pipe-line repair devices and Clark builds gas engines and compressors for the oil and gas industries. Mr. Norton has had seven years of experience with Dresser in various sales and engineering posts, both in the field and at the home office in Bradford. He is familiar also with gas engine and compressor work. His headquarters in Chicago will be in the Peoples Gas Building.

Bucyrus-Erie Power Shovel Is Built for Oil-Field Work

The 33-B, a 1¼-yard excavator convertible for shovel, dragline, clamshell, crane, or dragshovel service, has been announced by the Bucyrus-Erie



Co., South Milwaukee, Wis. Modern alloy steels and welded construction have been used to produce a machine combining smooth-working operation, high speed, high mobility, and ample strength to give steady dependable service in heavy digging.

This machine is designed for work in the oil fields; excavation for foundations, roads, pipeline trenches, etc. Used as a crane, it facilitates pipe-laying, handling of derrick and machinery equipment and erection of drilling machinery and buildings.

Among features to which the company draws attention are: Unusually long frames to reduce "nosing in" when digging; side frames of unit steel castings; welded box-girder boom, light weight for speed, strong for endurance; powerful modern hoist and chain crowd; all high-speed shafts operate on ball or roller bearings; big wide-faced clutches that take hold smoothly and firmly and hold adjustments accurately; simple lubrication; three different types of power, gasoline, diesel and electric.

Here and There With Men Who Manufacture Equipment

The Harnischfeger Corp., Milwaukee, Wis., has appointed the Standard Asbestos Manufacturing & Insulating Co., Kansas City, Mo., and the Allied Equipment Co., 1639 West Main Street, Oklahoma City, Okla., agents for P&H-Hansen Smootharc welders and welding electrodes. Both organizations are well known in the oil and gas industry.

B. E. Johnston, South American representative for I. Frank Brown, 30 Rockefeller Plaza, New York, has returned to Venezuela, after visiting the plants which manufacture the equipment he sells. R. H. Bradford, formerly an engineer with Apex Trinidad Oilfields, Ltd., has joined the Brown staff. His headquarters will be in Trinidad.

The annual sales meeting of the Lincoln Electric Co. in Cleveland, Ohio, was held in the company's new factory addition which has a steel frame fabricated and erected entirely by electric welding.

The Wailes Dove-Hermiston Corp., New York, has appointed the following distributors of Bitumastic protective coatings for industry: Lytle Engineering Specialties, Ltd., Montreal, Canada; Marshall-Wells Co., Duluth, Minn.; A. Y. McDonald Manufacturing Co., Kansas City and Joplin, Mo., and Hutchinson, Kans.; and Simmons Hardware Co., Industrial Division, St. Louis, Mo.

K. M. Schaefer has been appointed assistant to R. W. Ruddon, vice president and general manager of the Federal Motor Truck Co. He is collaborating with Mr. Ruddon in planning a sales program.

Timken Engineering Journal

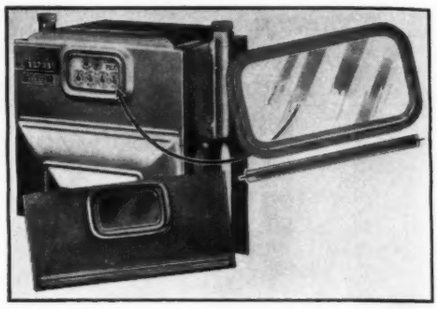
A complete revision of the general information section of the Timken Engineering Journal has been completed and copies are available upon request to the Timken Roller Bearing Co., Canton, Ohio. The data presented in this 294-page loose-leaf volume, furnished in a standard 8½- by 11-inch three-ring binder with stiff covers, includes a general discussion of the design and types of Timken bearings now available, a discussion of ratings and bearing selection, methods used for calculating bearing loads for a wide range of fundamental applications, and complete detailed information as to bearing sizes and load carrying capacity. For the convenience of designers accurate full- and half-size detail bearing drawings are presented for the complete list of single-row Timken bearings up to an outside diameter of 14 inches.

Lubri-Zol Forms Sales Company

The Lubri-Zol Corp., manufacturer of extreme-pressure lubricants, Solvenized gasoline concentrate and Solvenoil concentrate, has announced a new sales organization, the Lubri-Zol Sales Co., which will market the company's concentrates. The president of the new company is F. Alex Nason, vice president and general manager of Lubri-Zol; vice president, T. L. Holland, formerly president of the Anglo-American Chemical Corp.; treasurer, Kent H. Smith, who will continue as president of Lubri-Zol; secretary, D. K. Ford. Offices of the sales company will be at the factory and general offices of Lubri-Zol, in Cleveland, Ohio.

Emcovar Marks Forward Step in Glass for Tin Meters

The Pittsburgh Equitable Meter Co., Pittsburgh, Pa., has announced a new development, "Emcovar," a soldered, leak-proof index-box glass for tin meters, eliminating window-glass held in place with putty. The index glass consists of a rectangular frame of kovar metal, to which has been fused during the molding process the glass itself, which is approximately one-fourth of an inch thick. The metal frame projects approximately one-eighth of an inch beyond the glass on all sides.



Kovar is an alloy developed to fuse with certain kinds of glass and be permanently bonded after the two are molded together. It has been used in the manufacture of millions of radio tubes and in many other products where it has been necessary to fuse metal with glass.

Installation of Emcovar glass consists merely of soldering the kovar rim in the new one-piece gallery of the meter. Kovar lends itself well to soldering with the solders regularly used in the manufacture of tin meters. It is said no special acids or other types of soldering fluxes are necessary

In a series of tests Emcovar glasses were subjected to 80 to 100 times the highest operating pressure to which a tin meter ever would encounter in service and no leakage or breakage resulted. The manufacturer asserts there is no necessity for using a protective lid on meters equipped with this glass.

BAILER SERVICE IS MADE AVAILABLE ON SHORT NOTICE

What is believed to be the first trailer service of its kind is operated by the MidCo Bailer Co. of Oklahoma City. It is designed to provide a modern and efficient cleanout bailer service, available on short notice, to operators throughout the Mid-Continent and Gulf Coast fields. In the past few months this trailer has visited fields in Kansas, Texas, Oklahoma and New Mexico. W. A. Larson, who is in regular charge of the trailer, is considered an expert in this type of work. As service man he plans to be in the field at all times and available upon request through the main office of MidCo in Oklahoma City. The MidCo Bailer Co. was formerly the Ideal Bailer Co.

H. T. Swortwood, president, MidCo Bailer Co.; W. A. Larson, vice president in charge of trailer service, and Jack Jackson, shop superintendent, MidCo Tool & Supply Co.

BJ Straight-Hole Cable-Tool Bit Built to Drill Any Formation

A new design has been used in the BJ straight-hole cable-tool bit placed on the market by the Byron Jackson Co. of 2105 East Slauson Avenue, Los Angeles, Calif. Developed for drilling in any type of formation with cable tools, this device consists of a pilot bit, above which is a concentric reamer and stabilizer. The reamer is an integral part of the bit and there are no joints and no expanding or detachable parts. The length of the pilot bit is longer than the normal drilling stroke, insuring that the pilot bit always will remain in the pilot hole, thus serving as a positive straight-hole guide. The small diameter of the pilot bit permits it to penetrate hard formations, or formations with a steep pitch, with less danger of deviating from the vertical than when a larger-diameter bit is used.

The reamer-cutters have to break down only the upper edge of the pilot hole as they enlarge the hole to the desired full diameter. It is easier, quicker, and less expensive to drill a large-diameter hole by this method. The reamer-cutters act as straight-hole stabilizers because they are always out to full gauge and are located from 6 to 10 feet (depending upon size of bit) above the cutting edge of the pilot bit. The pilot bit also remains out to full gauge, and normal wear on both pilot bit and reamer-cutters will not result in tight hole being drilled.

The bit is made in nine sizes for holes ranging from 8¼ inches to 24 inches in diameter with the pilot hole from 6 inches to 12 inches, respectively.

Larkin Shoe Permits Cementing Through the Side Openings

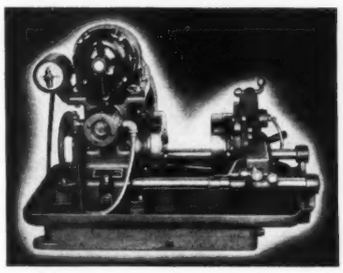
The Larkin formation pack shoe, now being introduced by the Larkin Packer Co., Inc., St. Louis, Mo., was designed to allow the operator to set the casing on the bottom of the hole and cement through the side openings. The sleeve covering the side ports is kept closed by a spring until the pipe is landed on bottom. This makes it possible to wash down while running pipe, without washing through the side openings, which would naturally have a tendency to wash away the wall and cause the sides of the wall to cave. However, when the pipe is set on bottom, the pump pressure forces the sleeve up, exposing the side ports, and this allows the cement to come out through the side openings in an upward direction all around the pipe.

This type of shoe is of high value when a rathole is drilled ahead. The shoe will partly enter the rathole and pack off on the tapered rubber. Packing off in this manner also centers the pipe, which allows for an even distribution of cement around the lower portion of the casing, prevents channeling, and assures a perfect cement job at the point at which it is most needed.

This type of shoe is said to be of particular value in areas where a gas or water sand is encountered immediately above the oil sand and it is necessary to get a good cement job immediately on top of the oil-bearing formation, preventing the upper gas or water from entering the oil sand.

New Member of Tom Thumb Line of Machines Offered

An addition to its Tom Thumb line of portable pipe machines has been announced by the Oster Manufacturing Co., Cleveland, Ohio. This model, the 512-A, rounds out a line of one-half to 2-inch machines. Equipped with a new-type diehead, integral with the carriage, the threading dies are more rigidly supported. Their life is lengthened and more accurate work is produced. The diehead is of the front-cutting type. This, together with the "close grip" front chuck, makes it possible to handle pieces as short as 2½ inches without using a nipple chuck. The size-setting marks are on top



of the head, plainly visible for easier, more accurate settings. An internal oiling system to the dies and cut-off tool is provided.

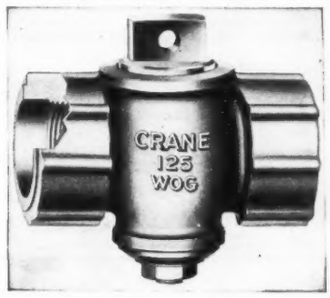
The holder for the cut-off and the reaming and chamfering tools is operated in a heavy block by a large ball-crank. This rectangular tool-holder, amply supported, eliminates twist and possible breakage of the tools. Another part of the diehead, the steady rest, necessary in the cut-off and reaming and chamfering operations, is solidly supported by a heavy rectangular block and is operated by a ball-crank. The overall length of the new machine is 34 inches; width, 21 inches; height, 24 inches, and its net weight is 375 pounds.

Gaso Pacific Coast Distributor

The Gaso Pump & Burner Manufacturing Co., of Tulsa, maker of oil-field, refinery and pipe-line pumps, has appointed the Service Oil Field Supply Co., 5333 Riverside Drive, Los Angeles, distributor for the Pacific Coast.

New Type of Gas-Line Cocks Is Placed on Market by Crane

To supplement is regular line of iron gas-line cocks, the Crane Co., Chicago, has added a new cock with recessed ends for use on curb-box in-



stallations. The importance of this feature is apparent when it is considered that these cocks usually are buried in the ground below the frost line. Dirt, grit and moisture make their way around the exposed threads of connecting pipes, causing corrosion and the costly and laborious task of digging into the ground to repair a leak in the gas line.

The new cocks are recessed at each end sufficiently to cover the entire threaded pipe surface. When the recesses are filled with a lubricant or paint to seal the space between the pipe and the inside of the cock opening, both the cock and the pipe threads are protected from outside contamination, thereby not only making a perfect connection, but adding years to the life of the installation.

These new cocks are made with flat head, brass plug and washer. The body is of galvanized iron, in ¾-, 1- and 1¼-inch sizes. They are air-tested to assure tightness, and are recommended for non-shock working pressure of 125 pounds cold water, oil, air or gas.

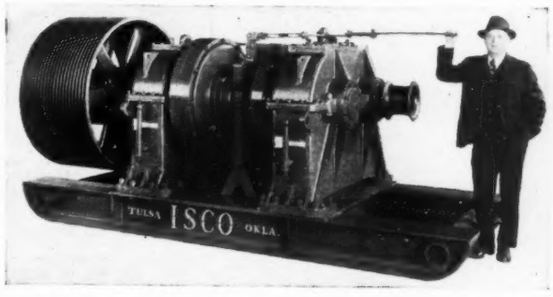
Harry Schuetz General Manager

The Pittsburgh Screw & Bolt Corp. has announced the appointment of Harry W. Schuetz as general manager of the Calona division (manufacturers of pipe-thread protectors for oil-country goods), succeeding the late Walter A. Clarke.

Mr. Schuetz, who has been associated with the company for years, is widely known throughout the oil industry. He will continue his work in that field and contact pipe mills along with his new duties.

SMOOTH OPERATIONS IS FEATURE OF REVERSE CLUTCH

Enumerating features which include maximum capacity, minimum upkeep, greater ease of operation and freedom of repairs, the International Supply Co. announces its new Isco reverse clutch, which under field tests has established an unusual record. Smoothness and ease of operation, the manufacturers say, are attributable to the fact that the inertia of moving parts which change direction of rotation during the reversing operation is much less than on old-style clutches. This is aided by the roller-bearing mounting of the operating lever.



The new clutch is of welded construction with heavy, structural-steel base, semisteel ribbed cases, hammer-forged S.A.E. chrome-nickel roller-bearing steel shafts and cast S.A.E. alloy steel herring-bone gears. The forward drive is by 2½-inch triple roller chain. It has only one lightweight double cam, limited movement, adjustable friction plates, bayonet-type gauges for checking oil level and oilbath lubrication of all moving parts. Sprockets are cut-tooth forged steel. Reverse and neutral positions are pivoted on ball bearings. Operating lever and clutch-yoke are alemite lubricated. There is a single forward lever control.

Oil Man's Calendar

December

2-3—Dallas, Tex., joint annual meeting of standing committees on federal income and excise taxation and on state and local taxation of general Mid-Continent Oil and Gas Association, Baker Hotel.

6—Memphis, Tenn., National Asphalt Congress.

6-10—New York, American Society of Mechanical Engineers.

6-11—New York, Exposition of Chemical Industries. Grand Central Palace.

7-9—Omaha, Neb., Nebraska Petroleum Marketers, Inc.

8-10—Flint, Mich., S.A.E. National Production Meeting.

14—Tulsa, annual meeting of directors of Mid-Continent Oil and Gas Association.

1938

January

13—Oklahoma City, Independent Oil Jobbers Association of Oklahoma.

17-21—Cleveland, Ohio, American Road Builders Association.

24-25—Minot, N. D., Northwest Petroleum Association, North Dakota Division.

27-28—Minneapolis, Minn., Northwest Petroleum Association, Minnesota Division, Hotel Radisson.

February

7-9—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel

14-18—New York, American Institute of Mining and Metallurgical Engineers, annual meeting, Engineering Societies Building.

22-24—Columbus, Ohio, Ohio Petroleum Marketers Association, fifteenth annual convention and marketing exposition, Deshler-Wallick Hotel.

March

2-3—Indianapolis, Ind., Indiana Independent Petroleum Association, spring meeting.

7—Rochester, N. Y., American Society for Testing Materials, Spring Regional Meeting and Group Committee Meetings.

16-8—New Orleans, twenty-third annual meeting, American Association of Petroleum Geologists, Roosevelt Hotel.

April

13-15—Cleveland, Ohio, National Petroleum Association.

13-15—Houston, Tex., Petroleum Industry Electrical Association.

17-21—Dallas, Tex., American Chemical Society.

20-22—Buffalo, N. Y., American Institute Mining and Metallurgical Engineers, Open Hearth Conference.

May

(?)—Tulsa, Okla., Natural Gasoline Association of America.

CLASSIFIED ADVERTISING

Leases and Drilling Blocks

New Texas Oil and Gas Leases. Large or small tracts for brokers and salesmen. State requirements. H. H. WHITE, P.O. Box 674, San Antonio, Texas.

SECURITY ABSTRACT COMPANY
El Dorado, Arkansas
Fee, Lease & Mineral Ownership on short notice. Ownership maps.

ILLINOIS
A complete weekly report on Illinois operations.
One month.....$5.00
Six months.....$25.00
Sample report on request.
OIL NEWS SERVICE
P. O. Box 146 Flora, Illinois

ARKANSAS
Does not have any production (proration) restrictions. The opportunity for quick "payouts" is obvious. Come here and investigate royalty and lease opportunities.
WILLIAM MONROE LAYTON
P. O. Box 411 Texarkana, Ark.

CAN FIND any oil structure that will produce when penetrated. P. O. Box 303. Tonkawa, Oklahoma.

New Mexico OIL LEASES WHOLESALE
40 acres at a time.
Roy G. Barton, Clovis, New Mexico

Specializing leases twenty acres up dollar acre, East Tex., La., S. Ark. Owners—Attorney, Box 1122, Little Rock, Arkansas

I HAVE two block of leases which I will sell for a drilling contract to 3500 feet, said leases located in Hamilton County, Illinois. If interested write or call on George W. Hogan, Jr., McLeansboro, Illinois.

FOR SALE BY OWNER, Ten year paid up oil and gas lease, Brewster County, Texas; 40 acres and up at $1.00 per acre. Also royalty at reasonable prices. Address G. C. DAWSON, 1207 Bailey Ave., San Antonio, Texas.

I HAVE two blocks of oil and gas leases. One in the Panhandle of Texas and one in New Mexico, which I will sell for a drilling contract, or will put up the acreage for someone to drill for half interest. CHARLIE PRIOLO, 2301 W. 6th St., Amarillo, Texas.

WE OFFER 3,000 acres center Alamo Structure, Huerfano County, Colo. Test well south end of structure opened wet gas oil. Our drill north structure area just spudded. Best of geology, wet gas assured and will make deal with responsible operator to drill the central area. S. W. Pressey, Pueblo, Colo.

"FARM-OUTS" IN PROVEN AREAS
Wish to contact responsible operators and drilling contractors able to take over immediate drilling of several leases in Permian Basin fields—depths 1,600 to 3,500 feet—allowables up to 75 barrels daily—Please give information as to financial ability when replying — Address "Land Dept," Box J-152, The Oil and Gas Journal, Tulsa, Oklahoma.

ILLINOIS: 3,000 acres; will give half interest for drilling contract. Recommended for development. RESEARCH SERVICE, 423 Cuyahoga Bldg., Cleveland, Ohio.

Leases and Drilling Blocks

ONE HUNDRED SIXTY ACRES
In heart of Clay City-Noble, Illinois pool, close to production. Want action and over ride. Fee Holder. Box J-122, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE Oil producing leases with many locations yet to drill, leases for sale near production and wildcat leases for drilling contracts.
W. P. HARLEY
Bowling Green, Ky.

FOR LEASE, 125 acres joining Darrow field. South of gusher. Write Bella Landry, 516 Iberville St., Donaldsonville, La.

FOR SALE—East Kansas Gas Properties, including Booster Station; 68 gas wells; approx. 7000 acres; monthly income $1200. KANSAN OIL CORP., 302 Midland Bldg., Kansas City, Mo.

7220 ACRE BLOCK—FEE LAND, HUDSPETH COUNTY, TEX., $5 per acre, 97½c per ac. due State, at 3%, payable about 30 years. In Orange Basin district, fine geology, almost entirely surrounded by big company blocks—Shell, Magnolia, Rio Grande, etc. Ready for development now. or wonderful fee land investment. Price is for quick deal. GEORGE M. COWELL CO., 412 W. 6th St., LOS ANGELES, CALIF.

HAVE structure 10,000 acres leases New Mexico, best geology, location, test well partly drilled, fully equipped machinery, casing. Account death partner must arrange deal. Will sell entire or part. C. H. Radford, Box 614, Pueblo, Colorado.

WANTED—Producing oil lease for $20,000 cash. Write full information, Box 7342 Oakland, Pittsburgh, Penna.

Leases and Drilling Blocks

NEW MEXICO OPPORTUNITY — The well-known Tome Structure, Eastern Valencia County, is now being developed. This is estimated to be one of the first and largest recognized structures in State. Shallow drilling already completed verifies every geological prediction. Extensive development already started.

A limited amount of acreage on this structure is available, including offset acreage and drilling blocks. Consult RINGLE DEVELOPMENT CORPORATION, owner, P. O. Box 286, 'Phone 3365, Albuquerque, New Mexico.

LARGE BLOCK of acreage in northwestern part of Red River County, Texas. Will make reasonable deal for a well. Good geological and magnetmeteric reports. W. H. Upton, Paris, Texas.

FOR SALE—88 wells, 870 acres of leases, many locations to drill. No proration. All leases connected to pipe line. Address 321 East Court Street, Bowling Green, Ohio.

INDEPENDENT PRODUCER owns proven leases in shallow and deep sand areas West Texas and New Mexico. Need cash for development. Dr. T. J. Jefferies, Box 115, Kermit, Texas.

LEASE FOR SALE: 80 acres in Clay City pool, extremely well situated, production on three sides. Fee Holder, Box J-150, The Oil and Gas Journal, Tulsa, Oklahoma.

Wanted

WANT Reliable Drilling Contractor interested in drilling test well in southeastern part N. Mex. L. Box 135, Shamokin, Pa.

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER
Patents Obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

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LANCASTER, ALLWINE & ROMMEL
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THE OIL AND GAS JOURNAL

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WILL FURNISH money for drilling offsets and proven leases under 3,500 feet for working interest. Give full information. P. O. Box 383, Dallas, Texas.

INQUIRIES solicited from corporations interested in raising capital through marketing of corporate securities.
THE BROOKWORTH CO., Inc.,
110 East 42nd St., New York City.

L. M. LEE, Geologist specializing in unproven fields. Drilling operations financed. Address Sam Houston Hotel, Houston, Tex.

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1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*
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6 Lines	*2.10*	*3.60*	*5.10*	*6.60*
7 Lines	*$2.45*	*$4.20*	*$5.95*	*$7.70*
8 Lines	*2.80*	*4.80*	*6.80*	*8.80*
9 Lines	*3.15*	*5.40*	*7.65*	*9.90*
10 Lines	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma